Vol. II

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, [redacted]

No. [redacted] 4

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, [redacted], ET AL.

Imbodo Coffman and C. E. Hettinger.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA.

FILED JUNE [redacted] 1917

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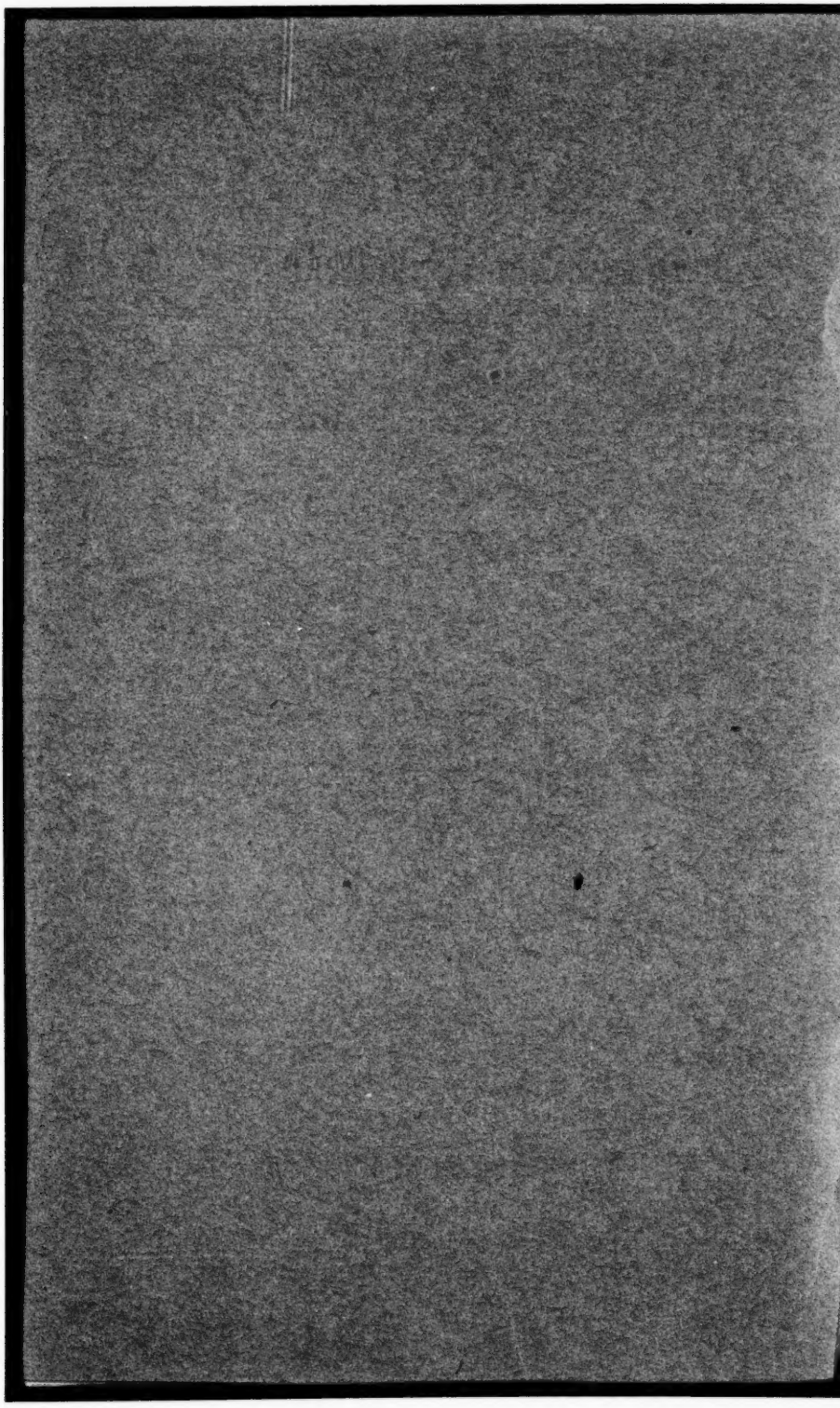

(32,006)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1926

No. 439

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA

VOLUME II

INDEX

	Original	Print
Davis exhibits	944	705
No. 1—Report showing the general geological description of natural gas properties, classifications of acreage and estimated gas reserve as of December 31, 1923	944	705
No. 2—Maps of gas holdings	1190	952

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UNITED FUEL GAS COMPANY

REPORT SHOWING

General Geologic Description of Natural Gas Properties
Classification of Acreage

and

Estimated Gas Reserve as of December 31, 1923

PART 1

RALPH E. DAVIS, Engineer,
Pittsburgh, Pennsylvania.
May 15, 1924

DAVIS EXHIBIT No. 1

UNITED FUEL GAS COMPANY

REPORT SHOWING

General Geologic Description of Natural Gas Properties
Classification of Acreage

and

Estimated Gas Reserve as of December 31, 1923

PART 1

RALPH E. DAVIS, Engineer,
Pittsburgh, Pennsylvania.
May 15, 1924

DAVIS EXHIBIT No. 1

RALPH E. DAVIS
Engineer
902 Peoples Gas Building
Pittsburgh

May 15, 1924.

UNITED FUEL GAS COMPANY,
Charleston, West Virginia.

Gentlemen:—

I submit to you herewith report covering the natural gas properties of the United Fuel Gas Company, the Warfield Natural Gas Company and the Cabin Creek Gas Company.

Yours very truly,

Ralph E. Davis.

RED/CEA

UNITED FUEL GAS COMPANY

REPORT SHOWING

General Geologic Description of Natural Gas Properties
Classification of Acreage
and
Estimated Gas Reserve as of December 31, 1923

INDEX TO REPORT

Part I.

LETTER OF TRANSMITTAL

SECTION. 1. Explanation of Methods, Results and Recommendations

PAGE

Scope of Report 7
Property Covered 8
Acreage Held on December 31, 1923 9
Wells Owned and Operated December 31, 1923 10
Data Available and Used in Study 11
Procedure 12
Geology 13
Geological Map—Description 18
Subsurface Structure 19
Methods Used in Plotting Structure 20
Determination of Elevations of Wells 21
Plotting Sand Depths 22
Subsurface Structure Contours 23
Classification of Territory 23
Gas Reserves of Proven Gas Territory 26
Gas Reserves of Probable Gas Territory 31
Possible Gas Territory 32
Summary of Results 32
Summary Showing Classification of Acreage as of Dec. 31, 1923 34
Recommendations 35

INDEX TO REPORT

(Continued)

SECTION II. Summary Tables

Table No. 1 showing
Gas Reserve of Proven Acreage Arranged by Pools and Areas
Calculation of Production Factor for Each Sand and Area - - - - - - - - Pages 37–44

Table No. 2 showing
Gas Reserve of Probable Acreage - Pages 45–48

Table No. 3 showing
Rock Pressure—Averages and Production-Pages 49–60
(Arranged by Proven Pools and Areas)

SECTION III. Production Graphs

Rock Pressure Drop per Mile—Spencer Pool - - - Page 61
Rock Pressure and Rock Pressure-Production Graphs-Pages 62-110
(Arranged by Fields and Areas)

SECTION IV. Geological Data

Geological Outline Map (Scale: 1 inch equals 8 miles) showing Pools, Sand Distribution and Structural Areas
Typical Well Logs - - - - - - - - - Pages 111–116

SECTION V. Detailed Data

Description of Areas: Probable, Possible and Unfavorable Gas Territory - - - - - - - - - - Pages 117–146

Table No. 4. Rock Pressure–Production Well Data-Pages 147-251
(Arranged by Fields)

Part II.

GEOLOGICAL MAP IN FIVE SHEETS

Scale: One inch equals one mile
Outline Map-One Sheet
Scale: One inch equals two miles

710

SECTION I.

EXPLANATION OF METHODS, RESULTS AND RECOMMENDATIONS

UNITED FUEL GAS COMPANY

REPORT SHOWING

General Geologic Description of Natural Gas Properties

Classification of Acreage

and

Estimated Gas Reserve as of December 31, 1923

SCOPE OF REPORT

This report covers an investigation of the fee and leasehold property owned and controlled by the United Fuel Gas Company as of December 31, 1923. The gas producing properties directly owned by the Cabin Creek Gas Company and by the Warfield Natural Gas Company are included. Because of the close association of these companies, the work has been carried out as a single undertaking and reference made throughout the report to the "company" refers to whichever one of the three companies holds the property under discussion. Properties owned by other interests are referred to as "foreign" properties.

The purpose of the work has been (1) to assemble all available data pertinent to a study of the gas reserve of the property held by each company; (2) to determine said reserve so far as it is possible to do so in the present partially developed and partially tested condition of a large part of the territory; (3) to classify the undeveloped acreage now held as to its gas possibilities; and (4) to outline areas which have been proven unfavorable for production in well-known sands. In the determination of the gas reserves of the various parts of the territory distinction is made between reserves which are considered proven and reserves which are considered probable. The proven reserves are those contained in areas which have been thoroughly tested and which are now producing gas. The probable reserves are those believed to be available in territory partially tested by wells or in territory which appears to be especially favorable for gas because

of the geological conditions and the relation to known productive areas.

The report is presented in two parts.

PART I gives a detailed explanation of methods used, a summary of results obtained, recommendations, and contains all data which has been gathered and used in the preparation of the report, graphs and estimates of reserves of each part of the territory.

PART II consists of:

[1] A geologic map (in five sheets) prepared on a scale of one inch equals one mile. This map shows the principal geologic features of the territory, surface and subsurface structure, the location of productive wells and dry holes (including those owned by foreign interests) and shows a classification of the territory into proven, probable, possible and unfavorable areas.

[2] An outline map on one sheet [scale ½″ = 1 mile] showing (a) county boundaries and principle towns, (b) proven and probable territory, (c) company acreage classed as proven or probable, and (d) main gas transportation lines and compressor stations.

PROPERTY COVERED

The following table shows the property owned or controlled as of December 31, 1923 by each of the three companies. The leasehold property is controlled by virtue of the terms of the usual lease contract. The records of the land department of each company have been accepted as evidence of such ownership or control since it has been considered unnecessary for the purpose of this report to verify each deed or leasehold agreement.

The following table shows also the total number of gas and oil wells owned on December 31, 1923.

ACREAGE HELD ON DECEMBER 31, 1923

Title	Operated	Unoperated	Totals
United Fuel Gas Company			
Leasehold:			
Oil and Gas	12,713.46	73,283.20	
Gas	47,238.30	522,264.90	
TOTAL LEASEHOLD	59,951.76	595,548.10	655,499.86
Fee:			
Oil and Gas	60.84	681.21	
Gas	2,863.67	15,867.02	
Oil		432.00	
Minerals other than oil	71.50	13,259.32	
Absolute other than oil	232.45	7,676.53	
Absolute		49.07	
Coal		13.50	
Surface only		82.61	
Miscellaneous		2.25	
TOTAL FEE	3,228.46	38,063.51	41,291.97
TOTAL ACREAGE	63,180.22	633,611.61	696,791.83
Warfield Natural Gas Company			
Leasehold:			
Oil and Gas		29,812.50	
Gas	4,315.50	75,308.35	
TOTAL LEASEHOLD	4,315.50	105,120.85	109,436.35
Fee:			
Gas		636.00	
Absolute		41.50	
TOTAL FEE		677.50	677.50
TOTAL ACREAGE	4,315.50	105,798.35	110,113.85
Cabin Creek Gas Company			
Leasehold:			
Oil and Gas	1,405.00	6,600.00	
TOTAL LEASEHOLD	1,405.00	6,600.00	8,005.00
Fee:			
None			
TOTAL ACREAGE	1,405.00	6,600.00	8,005.00

(Continued)

ACREAGE HELD ON DECEMBER 31, 1923 (Continued)

SUMMARY

Title	Operated	Unoperated	Totals
United Fuel Gas Company	63,180.22	633,611.61	696,791.83
Warfield Natural Gas Company	4,315.50	105,798.35	110,113.85
Cabin Creek Gas Company	1,405.00	6,600.00	8,005.00
TOTAL ACREAGE	68,900.72	746,009.96	814,910.68

WELLS OWNED AND OPERATED DECEMBER 31, 1923

	Gas	Oil	Total
United Fuel Gas Company	741.7	..	741.7
Warfield Natural Gas Company	46.	..	46.
Cabin Creek Gas Company	9.	33	42.
TOTAL	796.7	33	829.7

DATA AVAILABLE AND USED IN STUDY

The following data has been available and has been carefully classified where necessary and used:

(1) Property maps (scale 4″ = 1 mile) on which are shown the major portion of the territory controlled by each company, also locations of all wells and tests made within the area studied. The lease boundaries of various tracts held are indicated on these maps except that in certain parts of the territory the maps are not complete in this detail. In general this has had no unfavorable effect on the work as the detailed location of each lease is of minor importance.

(2) Topographic maps published by the United States Geological Survey covering the entire area under consideration.

(3) Structure maps published by the West Virginia Geological Survey (for portions of West Virginia only) showing the structure of the surface formations. These structure maps have been worked out by the Survey, using various coals, the Kanawha Black Flint or the Big Lime as key horizons, and have been found sufficiently correct in the greater part of the area to make unnecessary more detailed field studies of surface structure.

(4) Published reports of the West Virginia Geological Survey.

(5) Well records of all company wells giving the location of the well, the date of its completion, the approximate elevation of the mouth of the well, depth to the top and bottom of formations penetrated, producing horizon, tubing and casing record, initial rock pressure, initial open flow, etc.

(6) Well records of many foreign wells located on properties adjoining or in the general vicinity of company leaseholds. These well records are usually but partially complete. The data given generally includes date of completion, depth of the well, producing horizon, reported initial open flow, and the depth to the producing horizon.

(7) The productive capacity of all company wells as reflected in the pressure data records of the company which have been carefully recorded since 1912.

(8) Production of each well in each year which was determined for the purpose of a previous report.

(9) Rock pressure data for practically all company wells. Rock pressures have been taken in each year for practically all wells completed since 1909.

PROCEDURE

Before undertaking any of the detailed work connected with the determination of the reserve of any part of the field, a comprehensive study has been made of the entire region in which the properties are held to determine such relations as may be found to exist either in particular places or in the entire territory between the geologic structure and the accumulations of gas or oil in productive pools.

Portions of the field which have been largely developed by gas wells have been studied with particular care to determine a method of measuring their gas reserve from the data available. It has been found that these developed portions of the gas fields have in the past given up their gas with a consistent drop in rock pressure and this has made it possible to measure the gas reserve of these areas by a special application of the rock pressure-production method. Briefly stated, use is made of Boyle's Law that the quantity of a gas present in a given volume varies directly as the absolute pressure.

Portions of the territory that have not been proven to contain commercial oil or gas pools have been studied to determine whether the conditions are favorable to the accumulation of oil or gas. In this study the location of such areas with reference to producing areas or to belts of proven dry territory has been considered the major evidence of value. The trend of the pools and the relation of same to structure has been given due weight. This has permitted all territory held and mapped to be classified as follows:

(1) Proven gas territory
(2) Proven oil territory
(3) Probable gas territory

(4) Probable oil territory
(5) Possible gas or oil territory
(6) Unfavorable territory

The classification as shown above for the territory held by each company is shown on page 34.

GEOLOGY

The general geologic studies carried out have been the following:

A map (in five parts) covering the territory on a scale of one inch equals one mile has been prepared on which there has been recorded the location of all producing wells and dry holes. Convenient symbols have been used to distinguish gas wells from oil wells, and to indicate the producing sand or sands of each well. The natural grouping of wells into fields (or pools) has been indicated on these maps by enclosing the wells of a group by a border, red having been used for the gas pools and green for the oil pools.

In those portions of the field where wells are sufficiently numerous to permit the preparation of a subsurface structure contour map, the structures have been indicated by structure lines drawn on the geologic maps. Considerable difficulty was met in the preparation of these maps and this difficulty was to a large extent overcome by preparing geologic cross-sections normal to the major folding of the region. For this purpose twenty-three geologic cross-sections normal to the axis of the Warfield Anticline and four miles apart were prepared, and one cross-section parallel to the Warfield Anticline was prepared. These sections were made with a horizontal scale of one inch equals one mile to a vertical scale of one inch equals two hundred and fifty feet for use during the progress of the work.

The detail of subsurface structure was worked out by plotting sand elevations of individual wells.

For those portions of the territory in which wells are so widely scattered that subsurface structures could not be mapped, the surface structures as mapped by the West Virginia Geological

Survey were transferred to the geologic map being prepared. The surface structures thus transferred are shown on the maps with black contours, whereas the subsurface structures are indicated by red contours for the Injun Sand, green contours for the Berea Sand, purple contours for the Weir Sand, blue for the Big Lime and yellow for the Salt Sand. It is pointed out that subsurface maps would have been preferable for all parts of the field and that surface structure maps have been used only where made necessary by lack of sufficient data. As new test wells are drilled in outlying portions of the field, an attempt should be made from time to time to determine the convergence of beds under such portions of the field, as this may have a bearing on the drilling program that should thereafter be followed.

The axes of the major anticlines and synclines have been indicated on the maps, except where subsurface structure is detailed.

The principal facts noted and conclusions drawn regarding the geologic occurrence of the gas and oil pools in the territory studied are the following:

(1) The formations from which production is obtained at present belong to the Lower Carboniferous and the Upper Devonian Systems.

(2) The more important gas producing horizons in order of importance are the following: Injun Sand, Berea Sand, Weir Sand, Big Lime, and Maxon Sand. The Keener, Salt and Squaw Sands are of minor importance.

(3) The oil production has been found principally in the Berea, Weir and Injun Sands. The Squaw Sand and the Keener Sand produce considerable oil in some parts of the territory, and the Salt Sand has afforded a few shortlived oil wells.

(4) The general position of the gas and oil accumulations is on the northwesterly flank of the granticline which runs from the Ohio Basin to the Appalachian folds.

(5) The general trend of the gas and oil pools is parallel to that of the major folding and there appears to be some localization of gas pools where minor folds cross the major structure.

[illegible] [illegible] [illegible] [

(20) The possibility of finding gas at a horizon deeper than any test that has yet been made will remain a question until such time as the demand for gas and the resulting price justifies the drilling of one or more deep tests. One well in the Triple State Field drilled to a depth of 2,670 feet is producing from that depth (possibly from the Cornifermum). Gas from this horizon contains sulphur and can only be used when mixed with large quantities of clean gas. Eventually much deeper tests should be made, and having in mind the contours of the upper formations to the southeast, it is suggested that such deep test when made be a mile or two southeast of the Westfield Anticline.

Detailed geologic section representation of three portions of the territory have been prepared from well logs and are shown in Section IV, Part I, of the report. The sections shown are the Chesbrough Pool, the Cabin Creek Pool and the Broomfield Pool. The Chesbrough and Broomfield Pools are located north of the Westfield Anticline; the Cabin Creek Pool lies to the south of it.

The surface elevations shown for the three wells used are the surface elevations of those wells. In each area the surface elevation varies from well to well considerably. The relative position of the several producing sands and their depth below sea level is shown.

It will be noted that there is a marked variation in the thickness of the several sands and of the intermediate beds, the latter showing a distinct thickening. This increase in thickness of intermediate beds is generally toward the southeast.

The Big Injun Sand shows less variation in thickness than is indicated by the Square, Weir and Berea. The Berea is thin or missing in the Chesbrough Pool while in the Cabin Creek Pool it is about 30 feet thick. The Square and Weir Sands are thick in the area south of the Chesbrough Pool but missing in the Broomfield Section and thin in the Cabin Creek Section.

GEOLOGIC OIL MAP

The purpose of the geological map is to form a concise but comprehensive base on which gas and oil pools and geological features can be readily studied.

This map is made up in five sheets and covers the territory in which acreage held by the United Fuel Gas Company, the Cabin Creek Gas Company, the Westfield Natural Gas Company and also the Columbia Gas & Electric Company is located. The territory of the Columbia Gas & Electric Company is included on the maps because a study similar to that herein described is in preparation for the Columbia Gas & Electric Company. The scale used is one inch equals one mile and the primary divisions of the map correspond to the farm maps of the company. These latter are on a scale of four inches equals one mile so that the area relation between the two is sixteen to one. The farm maps are divided into squares eight inches to a side, called map squares, and these divisions are also shown on the geological map to facilitate cross reference.

All individual gas wells and dry holes whether those of the company or of foreign ownership have been plotted and numbered according to the system used on the company farm maps. The producing sands of each gas well are noted by special symbols. Oil wells are not shown individually but in order to show the limits of an oil pool, a green line is drawn outside of the edge wells of each pool. In order to show the intensity of drilling within oil pools, a cross is used, each line of which is drawn proportional in length to the number of wells. For every sixty oil wells within a square mile, an inch of line is used and the center of the cross is placed centrally over the group of wells for that square mile.

The complete legend for the data on the geological map will be found on Sheet No. 5 of the map.

SUBSURFACE STRUCTURE

Each portion of the producing area has been separately studied and the subsurface structure determined in each where sufficient data has been available. Where the information has been too scanty to permit subsurface mapping, the structure as revealed in the surface beds and mapped by the West Virginia Geological Survey has been transferred to the geological map. The surface structure contours are in black while the subsurface contours of the Injun Sand are red, Berea green, Weir purple, Big Lime blue, and Salt Sand yellow.

The source of information for the determination of the positions of sub-surface beds was the excellent collection of well logs of the company wells and foreign wells which the company has on file. For well logs not contained in the company file, reference has been made to the county reports of the West Virginia Geological Survey.

Surface structure is shown with reference to sea level datum, while the subsurface contours are prepared with reference to a datum plane 3,000 feet below sea level. This is because all of the producing sands in this section of the state lie above this depth and most of them below sea level. With contours increasing in magnitude therefore, a rise is indicated in the beds and not a depression, as would be the case were sea level chosen as datum.

Since the record of well logs is largely for foreign companies, which show the depths to the producing sands only, structure contours have been drawn for these producing sands.

METHODS USED IN PLOTTING STRUCTURE

The method first used to work up structure on subsurface beds was to run at equal intervals cross section lines through the field. These lines were drawn at right angles to the general trend of the main axis of folding in this section of the state as indicated by the direction of the axes of the synclines and anticlines marked on the geological maps of the West Virginia Geological Survey. These lines were made parallel and the spacing between them was made four miles. At intervals of one mile along these cross section lines, panels were marked off and numbered. Each panel extended two miles on either side of the section line and therefore included an area one mile wide along the line and four miles long at right angles to the line. Within each of these panels the well logs of wells were recorded on special form ruled up for the purpose. In all panels the depth of the subsurface bed at the mid-point of the panel was desired but since it is exceptional to have a well located just at this point, wells within a reasonable distance were used and their average data taken to represent the conditions at the mid-point and on

the cross section line. Where wells were frequent, only those wells closest to this mid-point were used for the average but where wells are far apart, those available were used.

It was necessary to use averages rather than rely on the data for single wells for several reasons, chief of which was the fact that a very large part of the information is from logs of foreign companies and in the great majority of cases no elevation of the mouth of the well is given. This is also true for company wells to a great extent and this omission of elevation makes it necessary to use some other means than that usually employed in plotting subsurface structure. Furthermore in many cases, drillers will vary in the exact division between the sand and its overlying horizon, some going into the sand farther than others on account of the gradual rather than abrupt change in condition of the formations passed through. Also there are conditions where an unevenness of surface may affect the depth and in cases of some foreign wells, their exact location is open to doubt. On account of these factors likely to cause error, averaging was resorted to.

DETERMINATION OF ELEVATIONS OF WELLS

The omission of the elevations of the mouths of wells is a serious one if any attempt is made to construct a structure map showing underground conditions, for without this elevation no plot can be made showing the relations of sands. If a structure map is to be made, these elevations must be obtained either by sending out field parties and making barometric observations or by estimating them. Since it would have taken a long time to get to all the wells of the field for the purpose of getting the elevation of the mouth of the wel and would have been very expensive, the method of spotting the locations of these wells on the topographic maps contained in the reports of the West Virginia Geological Survey was resorted to. It was found that our averages worked out very well in spite of the small scale of these maps and the close contour interval, each representing a difference of elevation above sea level of fifty feet.

Excellent results were secured for several reasons. The farm maps of the company are enlarged reproductions of these

county topographic maps so that the creeks are duplicated on a larger scale but relatively correct. Furthermore the map records of the company are excellent and the map locations of wells are carefully made. Another favorable factor is the fact that gas wells especially those of a wild-cat nature are usually located at creek intersections or at a place which is flat enough to permit of the erection of the rig without the extra work of hauling materials up a hillside. Such places are not only found with greater accuracy of location on the topographic maps but the contours at these parts are wider and the estimate can in many cases be made to the nearest ten feet in spite of the contour interval of fifty feet. On the other hand, oil wells were not used where better data was available for these must be spaced closer and therefore there is not the latitude in the selection of a place to drill so that oil wells may be placed anywhere along the sides of a hill with no definite marking to locate the position on the topographic sheet.

An opportunity to test the accuracy of this method of estimating elevations was given during the progress of the work when a party was sent into the field to determine elevations of wells which were of special importance. These elevations had been previously estimated and it was gratifying to note that in spite of the numerous chances for error the elevations as found by barometric readings checked reasonably close with the estimated elevations and no change had to be made in the structure contours originally drawn in.

PLOTTING SAND DEPTHS

Geological cross sections, normal to the direction of the principal folding and at intervals of four miles were prepared, using a horizontal scale of one inch equals one mile (corresponding to the geological map), and a vertical scale of one inch equal to 250 feet (to accentuate the folding.)

Instead of using the arithmetical mean of the depths to any sand, the log of the well was actually plotted in its relative position along the length of the section but projected on the line. The elevation of the mouth of the well was first plotted to get its relation to sea level and then from this point the tops and bottoms of important sands were measured. An average of

these points was then taken and a smooth curve run from panel to panel to connect them. Where no measurements within a panel occur, the line is assumed from the slope it has on either side where wells occur.

These section lines were transferred on the structure map, and for every difference of twenty-five feet in elevation along these lines as noted from the cross sections, a point was marked with its elevation. With enough such points it was possible to draw in contours on the producing sand.

SUBSURFACE STRUCTURE CONTOURS

The general position and trend of the subsurface folds having been found from the cross sections, and the contours having been roughed in as described above, more detailed work was carried out by plotting on the map the sand elevations of single wells and groups of wells and detailing the structure lines by use of this information. Practically all of the minor irregularities were determined in this way.

CLASSIFICATION OF TERRITORY

The territory controlled by the three companies is situated in the general gas belt extending from Roane County southwestward into eastern Kentucky. The classification of territory resulting from this study includes not only the acreage held by the three companies but that of other interests whose leases are contiguous or within the same general area as that of the three companies.

Four classifications have been made: (a) proven, (b) probable, (c) possible, (d) unfavorable.

Considered as a whole the classification of territory has been without regard to ownership, i. e., areas which appear unfavorable are so classed regardless of ownership by one of the three companies or by foreign interests; in like manner territory which is proven or probable or prospective has been classed without regard to ownership. It has been convenient however, in a few

instances to deviate from this rule, the special circumstances of each case being pointed out later.

(a) Territory which has been classed as proven includes all areas in which development has been prosecuted sufficiently to demonstrate the presence of gas or oil in commercial quantities under present operating conditions. Some good wells have been drilled in territory outside of the boundaries of that classed as proven but because of the isolated position of the wells, or the fact that an insufficient number of wells had been completed to justify the installation of pipe line, the territory in which such isolated wells are located is not classed as proven although its prospective value is of course recognized.

The territory controlled by the United Fuel Gas Company in Roane, Kanawha, Cabell and Mingo Counties is in the main blocked territory, i. e., comparatively few leases are held by foreign companies. However, in each of the several proven pools which in the main are controlled by the United Fuel Gas Company, some leaseholds are owned and operated by foreign interests. In classifying the territory of these proven fields controlled largely by one of the three companies, the leaseholds of foreign operators are similarly classified.

In a few localities, pools or portions of pools are almost entirely controlled by foreign interests, and these areas although highly productive are not classed as proven for the reason that their reserves are of no avail to the three companies whose reserves are being determined. It has been thought proper to show on the map as proven only those portions of the field which are either entirely controlled or largely controlled by one of the three companies, and for reason above stated to include the proven pools controlled by the Columbia Gas & Electric Company

(b) Territory which has been mapped as probable includes not only acreage controlled by the three companies but acreage controlled by foreign interests. No area has been considered highly probable unless its relation to a proven pool is such that the probability of the pool extending over the territory classed as probable is more or less obvious. Not infrequently test wells have been drilled some distance from proven pools and where these have obtained a good flow of gas from the same sand, it is

reasonable to assume that the proven pool will be found to extend to the location of these outlying test wells. Another factor that has been of value especially in some instances in classifying territory as probable has been the general trend of a neighboring pool and the structure as indicated by the subsurface structure contours. For example, the small gas pool developed near the western border of Wayne County (shown on geologic map sheet number four, map squares 20-37, 39; 22-37, 39) shows an accumulation of gas where the subsurface contours rise from a water-filled portion of the sand. These structure contours indicate a extension northeastward of the minor anticline on which the gas appears to have been accumulated and this leads to the classification of the territory northeastward as highly probable.

(c) Territory which has been classed as possible includes those portions of the field in which tests are very widely scattered and which should therefore be further tested to determine the possibility of commercial gas or oil accumulations. A considerable portion of this territory has been tested to a minor extent by wells drilled only to the Big Lime from which there was commonly some flow of gas. It is believed that eventually small wells in the Big Lime will be commercial as the pools now yielding a maximum quantity of gas reach a declining stage. The territory classed as possible has therefore two possibilities; (1) that small wells in the Big Lime will become commercial, and (2) that deeper testing to the horizon of the Injun, Weir, and Berea may reveal gas accumulations now unknown and giving no surface indication of their presence.

(d) Territory classed as unfavorable has been to a large extent tested with unfavorable results. Gas and oil pools of considerable size and in general showing an alignment with the structure must be separated from each other by areas in the producing horizons that are barren; and where a number of test wells have been drilled with no favorable result, the conclusion must be drawn that these wells indicate or outline such a barren territory at least to the depth tested. In some areas these dry tests have found salt water making the conclusion still more positive. This is true of a considerable portion of the territory in northwestern Roane and Wayne Counties traversed by the Parkersburg Syncline where wells drilled to the Berea Sand have

with two exceptions found only salt water. These exceptions are likely to be small accumulations of oil in a territory largely barren and no hesitation has been felt in classing the broad territory within the Parkersburg Syncline as unfavorable.

To the southeastward of the belt containing the several proven pools, the formations become more highly folded and but few test wells have been drilled, these having given no favorable result. Realizing that either oil or gas may be found to the southeast, the probability of this is much less than within areas classed as possible and no hesitation has been felt in classing the territory to the southeast as unfavorable.

GAS RESERVES OF PROVEN GAS TERRITORY

The selection of a method by which the gas reserves of a territory may be determined with reasonable accuracy has been the subject of an intensive study by the writer and his staff during the past few years, during which time many gas properties have been appraised. There are a number of methods in more or less common use, each being useful under certain conditions. The time-honored method of estimating gas reserves by comparison with older fields, the production of which is known, has certain advantages particularly in a new field. The estimation of reserves by the use of composite production decline curves is of particular use where it is necessary to determine the gas reserves of individual wells and the rate of their probable recovery. This method also has the advantage of permitting an estimate that includes only reserves that are economically recoverable under the conditions of operation at the time of the estimate.

Boyle's Law has been very useful in the determination of gas reserves of certain areas. The method is one which may be applied with confidence to definitely defined pools in which the texture of the sand permits a ready flow of the gas and in which there is no water or oil encroachment. The method would be of no use in the fields in which the oil and salt water replaces rapidly the pore space occupied by the gas. The gas pools of southwestern West Virginia are in formations either water dry or formations in which the salt water shows very little encroach-

ment on the gas pools. It is therefore a region in which Boyle's Law may be used with a high degree of confidence.

In the application of Boyle's Law to the problem at hand, it had been found quite difficult in our earlier work to apply the law successfully. The reason for this has been determined and a modification of method introduced which to a large extent avoids the difficulties formerly met with.

The principal difficulty in the application of Boyle's Law has been that, whereas there should theoretically be a proportional drop in rock pressure for production from a pool, it was found that this ratio apparently failed to hold for a number of important pools. A pool in which there is more or less variation in texture and in which drilling has proceeded from one portion of the pool progressively toward its limits, with occasional abandonment of older wells, gives the average rock pressure reading for the wells producing in a later year considerably higher than would have been found, had the sand been of even texture, quite porous and the pressure of various wells approximately equal at various time intervals. The data for such a pool when plotted in a single rock pressure production graph results in a curve or irregular line which affords a great deal of difficulty in its extrapolation.

In a study made of the Spencer Pool, it was discovered that the pool could be naturally subdivided into areas, the wells of each area showing a consistent decline in rock presssure as gas was being withdrawn. The wells of a group located near the center of the Spencer Pool showed an initial rock pressure of approximately one thousand pounds per square inch and by 1922 had declined to a rock pressure of approximately 50 pounds per square inch. The several wells of this group showed in each intervening year between 1907 and 1922 a rock pressure very close to the average rock pressure of the wells of the group. During the same time period, drilling was carried on progressively toward the eastern and western ends of the pool, the newer wells showing rock pressures very much higher than the older wells and in some cases approximating that of the original condition of the gas body. It was evident that barriers or partial barriers to the flow of gas existed in the sand and that the answer found by averaging, say, five old wells, with one new well would

be very different from the answer obtained were five old wells averaged with, say three new wells. In the second instance, a higher average rock pressure for the field would be indicated and the conclusion would be reached that depletion was less complete.

In this study of the Spencer Pool, it was found that the pool could be sub-divided into fifteen producing areas, the wells of each area showing a consistent decline. Rock pressure-production graphs were prepared for each sub-area and it was found that these graphs followed comparatively straight lines and that their extrapolation offered much less difficulty than the single graph representing all of the wells and all of the production of the entire pool. The reserves of the Spencer Pool were therefore determined by finding a reserve for each of its fifteen parts. The rock pressure time graphs and the rock pressure-production graphs prepared for the Spencer Pool are shown in Section III of this report. It will be noted that the rock pressure-production graphs for areas located near the center of the pool show a comparatively flat slope whereas those located near the two ends of the pool are quite steep. There are apparently two reasons for this, (a) the sand body near the central part of the pool is probably more uniform in texture and somewhat more porous than that near its ends permitting the accumulation of a larger quantity of gas in a given volume of sand, and (b) the withdrawal of gas from the central area reduces the rock pressure materially while that toward the ends of the pool is still high, and the resistance to the flow of gas being such that some gas migrates to the area of low pressure, gas is being withdrawn from the outer ends of the pool continuously not only through the wells of the outer area but also to the sand body of the central area where it escapes through the wells located there.

A graphical study has been made to determine if possible the rate of flow of gas from an area of high pressure within a pool to a contiguous area of somewhat lower pressure. This study is shown herewith in Section III. The average rock pressure of the wells of each sub-area of the Spencer Pool have been indicated for each year, and lines have been drawn connecting the several points for any one year. It will be noted that the lines form a series of trough-shaped graphs, and that the initial wells drilled in areas outward from the center found an initial rock pressure

somewhat reduced from the virgin condition of the pool. The slope of these lines shows an average decline in pressure toward the center of the pool of about 115 pounds per mile, indicating that for a sand of the average porosity of that of the Spencer Pool, the increase in rock pressure from a drilled-up and producing area outward to virgin territory approximates this figure. This data has been of material use in the study of highly probable territory contiguous to proven fields and of undrilled portions of proven and but partially developed pools.

The gas reserves of each area which has been classed as proven have been measured by the modified rock pressure-production graph as described above. Each proven area has been subdivided to the end that neighboring wells which show a consistent decline in rock pressure have been grouped together and a single graph prepared for each group. Considered as a whole, the graphs are remarkably straight and it is believed that their extrapolation gives a reasonably close estimate of the gas reserve of the proven territory. The results are tabulated and are shown herewith on page 33.

It will be noted that in several of the proven pools, certain undrilled areas have been enclosed with purple lines. These areas denote places where further drilling is believed to be essential to an economic withdrawal of the gas, as it is evident that if no wells are drilled in said areas an extremely long time will be required to exhaust the gas through surrounding wells. The proven areas outside of the purple lines are believed to be in the main sufficiently drilled for an economic recovery of their gas reserve. This is indicated by the fact that the wells of these areas show similar rock pressures as gas is withdrawn. The rock pressure in the undrilled areas is doubtless higher than in surrounding producing areas, this being indicated by the relation of rock pressures of nearby wells to the rock pressures of wells centrally located in the producing areas. Account of this is taken in estimating the total remaining reserves of each pool.

Attention is called to the fact that the estimate of proven gas reserve as made herein is determined separately for many small areas and groups of wells, and that although it is but natural that some of these estimates will be high, others are likely to be

low and that the number of estimates made is sufficient to permit a considerable balancing of errors. It is the opinion of the writer and that of all of the men who were engaged in the work that the method used is the best one that can be applied and that the answer obtained is conservative.

For convenience in the study of unproven territory, the ultimate reserve* of each proven pool and of each subdivision has been determined. The production from 1913 to 1923 inclusive for the wells of each area is known, the reserve of each area as of December 31, 1923 has been determined, and the production prior to 1913 of each group of wells has also been estimated by extrapolating upward and to the left the production—rock pressure graph of each group until said graph intersects the initial rock pressure abscissa of the group. The ultimate reserve of a given group of wells or of a proven developed area is then found by adding the production prior to 1913 (if the area produced prior to 1913), the production from 1913 to 1923 inclusive, and the reserve as of December 31, 1923.

This total for all sub-areas of a pool gives the ultimate estimated production of the pool and this figure divided by the number of acres in the pool gives the estimated ultimate production per acre. These quantities have been determined for each pool and are shown in Table No. 1, pages 37–43 inclusive.

It is interesting to call attention to the fact that the total estimated production prior to 1913, found by the method just described for the wells of the United Fuel Gas Company, totalled 60.8 billion cubic feet. The total production of the United Fuel Gas Company prior to 1913 was 63.98 billion cubic feet. The fact that the estimated production prior to 1913 checks so closely with the actual production of the company does not lead to the belief that estimates of future production can be made with any such degree of accuracy but it does indicate that the methods used may be expected to give a reasonably close approximation.

*By "ultimate reserve" is meant the total recoverable gas, that which has been produced plus that which will be produced.

GAS RESERVES OF PROBABLE GAS TERRITORY

The estimation of gas reserves of territory which has been classed as probable is naturally a difficult and uncertain undertaking. Here we are dealing with territory which is believed, from a careful study of all pertinent facts, to be gas territory, yet had it been sufficiently drilled to prove the correctness of this conclusion, it would be proven territory. Estimates made therefore of the probable territory must be considered as much less trustworthy than those made of the proven territory.

The method used of estimating gas reserves in proven territory can not be applied to the probable territory as the necessary data is lacking. Recourse is therefore made to another method, that of comparison with the nearest proven pool in the same sand, modifying same by such data as may be available from outlying test wells, etc.

In estimating the reserve of a particular area, say one square mile, which has been classed as probable gas territory, the following factors are taken into account; (a) Sand from which production is expected. This is judged by the nearness of a given producing sand; for example if the probable territory lies close to an Injun pool, it will be classed as probably productive from the Injun Sand. (b) Present rock pressure. The rock pressure may be indicated by an outlying test well within the probable area and if so, this is used. If such data is not available the rock pressure of the nearest wells of proven territory are used. (c) Portion of square mile held by company. If the company controls the entire area, the company is credited with its entire reserve. If the company owns a portion only of the probable territory it is credited with a proportional amount of the reserve. (d) The productiveness of the sand. This is determined as described in detail in the preceding section. (e) A factor ranging from 25% to 100% has been applied as the individual cases have warranted. This factor is used to guard against certain possibilities, namely: (1) that a portion of the territory classed as productive will prove to be non-productive; (2) that gas will flow from the territory in question to neighboring wells particularly those of field competitors so that by the time wells may be

drilled by the company, the reserve will have been to some extent reduced.

The farm maps showing the location of undeveloped territory controlled by the three companies have been used in conjunction with the geological map on which probable territory is shown. All company leaseholds lying within the area classed as probable have been given a gas reserve by the method just outlined. These results are tabulated in Table No. 2, page 47

POSSIBLE GAS TERRITORY

The territory classed as possible requires further testing to determine whether it has no worth or very great worth. Until such tests are made it is impossible to make any estimate regarding gas reserves of such territory. The fact that no estimate is made does not mean that the conclusion is reached that no gas will be produced from such territory; it merely means that no estimate made at the present time would be of any value.

SUMMARY OF RESULTS

The total proven gas reserve as of December 31, 1923 is indicated as 249.1 billion cubic feet of gas and the total probable reserve as of the same date is indicated as 414.6 billion cubic feet of gas, making a total of 663.7 billion cubic feet proven and probable gas reserve. The division of this reserve by fields is shown in the following table.

Inasmuch as no reserve has been estimated for the acreage classed as possible and unfavorable, a portion of which is likely to prove productive, and inasmuch as proper conservatism has been exercised in the classification of proven and probable territory, the estimate presented herewith is believed to be fair.

Summary Showing Proven and Probable Gas Reserves

(Billion cubic feet)

Field	Proven Reserve	Probable Reserve
Clendenin	201.7	149.4
Spencer	18.2	12.3
Kanawha	*19.7	*145.0
Triple State	**9.5	**15.7
Outlying Fields in Lincoln, Wayne, Mingo, and adjoining Counties		92.2
Total	249.1	414.6
Total Proven and Probable		663.7

*Includes reserves of Cabin Creek Gas Company.

**Includes reserves of Warfield Natural Gas Company.

Classification of Acreage

The following table shows by fields the classification of territory as proven (this being divided into drilled and undrilled) probable, possible and unfavorable divisions.

UNITED FUEL GAS COMPANY

(Including Warfield Natural Gas Company)

SUMMARY SHOWING CLASSIFICATION OF ACREAGE AS OF DECEMBER 31, 1923

Field	Proven Acreage			Probable Acreage	Total Proven and Probable Acreage	Possible and Unfavorable Acreage	Total Acreage
	Drilled	Undrilled	Total				
Clendenin	77,408 0	20,448 0	97,856 0	38,912 0	136,768 0		
Spencer	18,560 0	960 0	19,520 0	8,640 0	28,160 0		
Kanawha	*3,008 0	128 0	3,136 0	29,888 0	33,024 0		
Triple State W. Va	3,257 6		3,257 6	236 8	3,494 4		
Triple State Ky	11,334 4		11,334 4	7,571 2	18,905 6		
Outlying Fields in Lincoln, Wayne, Mingo, and adjoining Counties				39,424 0	39,424 0		
TOTAL W. Va	102,233 6	21,536 0	123,769 6	117,100 8	240,870 4	455,921 43	696,791 83
TOTAL Ky	11,334 4		11,334 4	7,571 2	18,905 6	91,208 25	110,113 85
TOTAL W. VA & KY	113,568 0	21,536 0	135,104 0	124,672 0	259,776 0		

*Includes 320 acres producing both oil and gas

CABIN CREEK GAS COMPANY

Kanawha	1,216 0	64 0	1,280 0	1,536 0	2,816 0	5,189 00	8,005 00
GRAND TOTAL	114,784 0	21,600 0	136,384 0	126,208 0	262,592 0	552,318 68	814,910 68

RECOMMENDATIONS

The studies made of the gas territory held by the United Fuel Gas Company lead to the following conclusions regarding this territory and other territory situated in the same general fields.

(1) The company should continue its policy of acquiring acreage particularly acreage not now held which is located in the areas classed as proven or probable.

(2) Acreage now held in areas classed as possible or unfavorable should be given such test as is specifically recommended in the detailed discussion of each such area. Where this testing fails to discover reserves of value, the acreage should be abandoned.

(3) The drilling of additional wells in the proven areas should be confined so far as lease requirements permit to areas indicated on the outline map as undrilled proven acreage.

SECTION II

SUMMARY TABLES

Table No. 1—Gas Reserve of Proven Acreage

(Arranged by Pools and Areas)

Calculation of Production Factor for Each Sand and Area

Table No. 2—Gas Reserve of Probable Acreage

Table No. 3—Rock Pressure—Averages and Production

(Arranged by Proven Pools and Areas)

TABLE NO. 1

Gas Reserve of Proven Acreage

(Arranged by Pools and Areas)

Calculation of Production Factor for Each Sand and Area

SUMMARY SHOWING GAS RESERVES AND PRODUCTION OF PROVEN AREAS

Area	Average Initial Rock Pressure when Drilled	Date	Average I. O. F. Million Cu. Feet	Estimated Production Prior 1913 Billion Cu. Feet	Production 1913-1923 Billion Cu. Feet	Estimated Reserves to 0 lb. Rock Billion Cu. Feet	Estimated Total Production to 0 lb. Rock Billion Cu. Feet	No. Company Wells	*No. Foreign Wells	Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Square Miles in Area	Total Prod. per lb. per Sq. Mile Mil. cu. ft. based on Sq. Mile Att. to Co. Wells	Additional Reserves from Undrilled Parts	
															Estimated Rock Pressure based on Average Variation of 115 lb. per Mile	Reserves based on Est. Rock Pressure and Ave. Prod. Factor Billion Cu. Ft.
BEREA SAND																
A	970	1917	2 4		2 13	0 74	2 87	3	0	70	0	0	70	4 2		
B	900	1917	2 2		6 27	2 09	8 36	15	2	3 25	25	1 0	4 50	2 9	58	0 3
C	850	1916	4 5		15 95	2 05	18 00	34	10	3 75	1 25	0	5 00	5 6		
D	700	1916	3 6		5 49	1 11	6 60	9	0	2 00	0	0	2 00	4 7		
E	870	1910	3 8	4 50	17 04	2 26	23 80	25	1	2 75	25	5	3 50	9 9	46	0 1
F	900	1910	4 4	2 20	9 79	1 41	13 40	17	5	3 00	75	0	3 75	5 0		
G	900	1910	5 8	5 60	13 63	1 27	20 50	25	7	3 10	70	0	3 80	7 3		
H	910	1910	4 1	2 15	6 88	0 75	9 78	11	6	1 50	1 00	0	2 50	7 2		
I	975	1910	3 1	1 60	3 91	0 50	6 01	5	4	75	25	0	1 00	8 2		
J	950	1913	4 5		9 15	0 85	10 00	13	9	2 20	80	0	3 00	4 8		
K	575	1916	3 4		4 54	0 66	5 20	11	10	2 00	50	0	2 50	4 5		
L	635	1917	2 6		4 35	0 70	5 05	9	21	1 00	3 25	0	4 25	8 0		
Total or Ave	845		3 7	16 05	99 13	14 39	129 57	177	75	26 00	9 00	1 50	36 50	5 9 (a)		0 4
SALT SAND																
C-C	610	1915	2 7		5 63	0 77	6 40	12	6	2 00	1 50	0	3 50	5 2		
INJUN SAND																
M	615	1915	0 6		2 95	2 60	5 55	7	9	1 00	1 75	0	2 75	9 0		
Grand Ave. or Total				16 05	107 71	17 76 0 40	141 52 0 40									0 4
Total						18 16	141 92									

(a) Calculation of Production Factor for Berea Sand:

(1) Total production, all drilled areas, to 0 lb. rock pressure ..... 129.57 Billion Cu. Ft.
(2) Acreage attributable to production given in (1) ..... 26.0 Square Miles
(3) Average initial rock pressure of wells giving production under (1) ..... 845 Pounds

$$\text{Production Factor} = \frac{129.57 \text{ Billion Cu. Ft.}}{26.0 \text{ (Sq. Mi.)} \times 845 \text{ (lb.)}} = 5.9 \text{ million cu. ft. per square mile per pound drop in rock pressure}$$

*As of 12-31-1921.

CLENDENIN POOL

SUMMARY SHOWING
GAS RESERVES AND PRODUCTION OF PROVEN AREAS

Area	Average Initial Rock Pressure	Date Average Initial Rock Pressure	Production Estimated prior to 1913 Bil. Cu. Ft.	Production Calculated 1913-1923 inclusive Bil. Cu. Ft.	Est. Future Reserves to 0 lb. Rock Bil. Cu. Ft.	Estimated Total Production to 0 lb. Rock Bil. Cu. Ft.	Total Number Company Wells	†Number Foreign Wells	Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Square Miles in Area	Total Prod. per lb. per Sq.Mi. Mil. Cu. Ft. based on Sq.Mi. Att. to Co. Wells	Estimated Additional Reserves in Undrilled Parts
BIG INJUN SAND														
A	500	1913		20 4	9 1	29 5	53	25	7 25	3 00	0	10 25	8 1	.....
B	520	1905	6 6	21 4	15 1	43 1	59	10	13 70	1 75	3 30	18 75	6 0	1 3
C	500	1908	1 7	4 1	3 1	8 9	10	16	2 75	2 25	.50	5 50	6 5	.2
C-C	500	1916		1 3	2 7	4 0	2	1	.55	.20	0	.75	14 5	.....
D	510	1908	6 5	10 0	7 5	24 0	18	8	3 75	1 25	.50	5 50	12 5	.3
E	455	1910	1 9	4 4	2 6	8 9	17	6	3 55	1 25	1 20	6 00	5 5	.6
F	505	1906	3 9	9 4	7 7	21 0	24	0	4 25	0	.75	5 00	9 8	2 4
G	505	1904	2 6	4 0	3 4	10 0	7	0	2 00	0	.25	2 25	9 9	.8
H	490	1913		10 2	13 0	23 2	22	13	9 25	1 25	1 50	†12.00	5 1	.7
I	490	1910	1 5	9 3	8 4	19 2	10	10	2 85	2 00	.90	5 75	13 7	.4
J	520	1917		7 7	7 9	15 6	16	1	4 25	.25	1 25	5 75	7 1	.5
K	500	1908	1 2	7 5	7 8	16 5	15	0	5 40	0	2 60	8 00	6 1	1 7
L	520	1904	1 3	11 0	10 9	23 2	12	0	2 65	0	2 35	5 00	16 8	1 0
M-M	520	1917		1 2	4 6	5 8	4	0	.75	0	2 25	3 00	14 9	.7
N	535	1909	0 9	9 4	12 1	22 4	24	2	6 20	.50	1 30	8 00	6 8	.4
O	520	1909	2 5	14 8	9 6	26 9	40	1	6 75	.25	0	7 00	7 7	.....
P	520	1905	10 0	14 8	13 2	38 0	50	3	15 85	.50	5 65	22 00	4 6	2 3
Q	450	1911	0 9	2 6	2 2	5 7	7	0	1 50	0	.25	1 75	8 4	.1
R	500	1909	0 7	5 0	5 3	11 0	16	0	5 15	0	.60	5 75	4 3	.3
S	495	1909	0 6	5 9	4 6	11 1	20	1	4 00	.25	.50	4 75	5 6	.2
T	510	1910	0 9	8 1	12 3	21 3	37	6	12 00	2 00	6 00	20 00	3 5	3 4
W	480	1911	•2 0	8 2	12 6	22 8	15	0	2 00	0	0	2 00	23 7	.....
Ave. or Total ...	502	.....	45 7	190 7	175 7	412 1	478	103	116 40	16 70	31 65	164 75	7 1 (a)	17 3

†12-31-1921.

•H 1.20 Square Miles in proven dry not included.

•W Includes production of 12 Navajo Oil & Gas Co. wells purchased by U. F. G. Co., 12-9-21.

(a) Calculation of Production Factor for Injun Sand:

(1) Total production to 0 lb. Rock Pressure ..... 412.1 Billion Cu. Ft.
(2) Acreage attributable to the production given in (1) ..... 116.40 Sq. Miles
(3) Average initial rock pressure of the wells giving production under (1) ..... 502 Pounds

$$\text{Production Factor} = \frac{412.1 \text{ Billion Cu. Ft.}}{116.40 \text{ (Sq. Mi.)} \times 502 \text{ (lb.)}} = 7.1 \text{ million cu. ft. per square mile per pound drop in rock pressure}$$

CLENDENIN POOL

SUMMARY SHOWING

GAS RESERVES AND PRODUCTION OF PROVEN AREAS—(Continued)

Area	Average Initial Rock Pressure	Date Average Initial Rock Pressure	Production Estimated prior to 1913 Bil. Cu. Ft.	Production Calculated 1913-1923 inclusive Bil. Cu. Ft	Est. Future Reserves to 0 lb. Rock Bil. Cu. Ft.	Estimated Total Production to 0 lb. Rock Bil. Cu. Ft.	Total Number Company Wells	†Number Foreign Wells	Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Square Miles in Area	Total Prod. per lb. per Sq.Mi. Mil. Cu. Ft. based on Sq.Mi. Att. to Co. Wells	Estimated Additional Reserves in Undrilled Parts
BIG INJUN AND SQUAW SANDS														
A-A	500	1911	0 4	5 8	1 5	7 7	9	15	.75	.50	0	1 25	20 5	.....
M	480	1921	.....	1 7	4 7	6 4	8	4	1 35	.60	.30	2 25	9 9	.2
Y	260	1913	.....	2 2	0 7	2 9	7	3	.70	.30	0	1 00	15 9	.....
Ave. or Total	413	.....	0 4	9 7	6 9	17 0	24	22	2 80	1 40	.30	4 50	14 7	.2
WEIR SAND														
X	200	1913	.....	1 3	0 5	1 8	6	0	.75	0	0	.75	12 0	.....
Z	380	1913	.....	2 9	1 1	4 0	8	0	1 00	0	0	1 00	10 5	.....
Ave. or Total	290	.....	.....	4 2	1 6	5 8	14	0	1 75	0	0	1 75	11 4	.....
Grand Ave. or Total	.....	.....	46 1	204 6	184 2 17 5	434 9 17 5	516	.....	120 95	18 1	31 95	.....	.....	17 5
					201 7	452 4								

†12-31-1921.

KANAWHA POOL

SUMMARY SHOWING

GAS RESERVES AND PRODUCTION OF PROVEN AREAS

Area	Average Initial Rock Pressure	Date Average Initial Rock Pressure	Production Estimated previous 1913 Bil. Cu. Ft.	Production Calculated 1913-1923 inclusive Bil. Cu. Ft.	Est. Future Reserves to 0 lb. Rock Bil. Cu. Ft.	Estimated Total Production to 0 lb. Rock Bil. Cu. Ft.	Total Number Company Wells	†Number Foreign Wells	Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Square Miles in Area	Total Prod. per lb. per Sq.Mi. Mil. Cu. Ft. based on Sq.Mi. Att. to Co. Wells	Estimated Additional Reserves in Undrilled Parts
*A	405	1917		2 3	0 2	2 5	10	(Not figured, as area is small with many foreign wells; also all wells producing both oil and gas.						
*B	417	1917		3 8	1 1	4 9	4	1	0 7	0 2	0	0 9	16 8	
*C	488	1917		5 0	4 5	9 5	5	0	0 8	0	0 1	0 9	24 3	0 1
D	460	1917		3 5	0 8	4 3	14	(Not figured, as area is small with many foreign wells; also all wells producing both oil and gas.						
E	468	1917		12 1	4 2	16 3	11	0	1 9	0	0	1 9	18 3	
F	480	1917		10 9	8 6	19 5	12	0	2 3	0	0 2	2 5	17 7	0 2
Total *Cabin Creek G. Co.	437			11 1	5 8	16 9	19							0 1
Total United Fuel G. Co.	469			26 5	13 6	40 1	37							0 2
Total or Average Cabin Creek G. Co. & United Fuel G. Co	453			37 6	19 4	57 0	56							0 3
Total or Ave. Areas B, C, E, & F	463			31 8	18 4	50 2	32		5 7	0 2	0 3	6 2	19 0 (a)	0 3

*Wells in Areas A, B and C are Cabin Creek Gas Company wells. †12-31-1921.

Note: There were very few rock pressure tests taken in this field, particularly on the Cabin Creek Gas Company's wells.

(a) Calculation of Production Factor for areas B, C, E and F:

(1) Total production to 0 lb. rock pressure ..... 50.2 Billion Cu. Ft.
(2) Acreage attributable to the production given in (1) ..... 5.7 Square Miles
(3) Average initial rock pressure of B, C, E and F ..... 463 Pounds

$$\text{Production Factor} = \frac{5.02 \text{ Billion Cu. Ft.}}{5.7 \text{ (Sq. Mi.)} \times 463 \text{ (lb.)}} = 19.0 \text{ million cu. ft. per square mile per pound drop in rock pressure}$$

TRIPLE STATE FIELD

ESTIMATION OF GAS RESERVES BY AREAS OF PROVEN POOLS AND CALCULATION OF PRODUCTION FACTOR

Area	Average Initial Rock Pressure	Date Average Initial Rock Pressure	PRODUCTION IN BILLION CUBIC FEET				Total Company Wells	CALCULATION OF PRODUCTION FACTOR				
			Estimated Previous 1913	Calculated 1913-1923 inclusive	Estimated Reserves to 40 lb.	Estimated Total		Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Sq. Miles in Area	Production per lb. Loss per Sq. Mile Million cu. ft.
ALL SANDS (SALT, MAXON, BIG LIME AND INJUN)												
All Wells	(a) 318	1913	(b)	15 5	(c) 9 5	(d) 25 0	65	22 8	0 5	0	23 3	(e) 3 9

(a) Unable to obtain accurate initial rock pressure.
(b) Estimate of production prior to 1913 not made on account of insufficient data.
(c) Economic Limit taken at 40 lb. on account of water conditions and past abandonment of wells at higher pressures.
(d) Production taken between 318 lb. rock pressure and 40 lb. rock pressure.
(e) Production Factor.

(1) Production between 318 lb. rock pressure and 40 lb. rock pressure	25.0 Billion Cu. Ft.
(2) Drop in rock pressure.	278 Pounds
(3) Acreage attributable to this production	22.8 Square Miles

$$\text{Production Factor} = \frac{25.0 \text{ Billion Cu. Ft.}}{22.8 \text{ (Sq. Mi.)} \times 278 \text{ (lb.)}} = 3.9 \text{ million cu. ft. per square mile per pound drop in rock pressure}$$

TABLE NO. 2

Gas Reserve of Probable Acreage

SUMMARY SHOWING PROBABLE GAS RESERVES

Area	Class of Territory	LOCATION		Sand	Square Miles of Company Acreage	Production Factor Used	Rock Pressure Used	Factor	Est. Reserves to 0 lb. Rock Bil. Cu. Ft.
		Sheet No.	Farm Map						
CLENDENIN FIELD									
209	Probable	2	29	Injun	0 2				
210	Probable	2	28, 37, 38	Injun	1 4	7 1	505	25%	1 3
211	Probable	2	37, 38	Injun	5 7	7 1	507	75%	15 4
213	Probable	2	29, 39	Injun	17 3	7 1	510	65%	40 7
304	Probable	3	47	Injun	1 5	7 1	500	75%	4 0
307	Probable	2, 3	38, 48, 49	Injun and Weir	22 0	7 1	485	75%	56 8
316	Probable	3	47, 48	Injun	12 7	7 1	462	75%	31 2
Total					60 8				149 4
SPENCER FIELD									
204	Probable	2	9, 19	Berea	1 1	5 9	635	25%	1 0
205	Probable	2	18	Berea	1 2	5 9	811	25%	1 4
207	Probable	2	18, 19	Injun	1 7	9 0	615	25%	2 4
208	Probable	2	17, 18, 27, 28	Salt	9 5	5 2	610	25%	7 5
Total					13 5				12 3
KANAWHA FIELD									
322	Probable	3	47, 48, 57	Big Lime, Keener, Injun	8 1	7 1	340	75%	14 7
U. F. G. Co. 325	Probable	3	57, 58	Weir	22 2	19 0	400	50%	84 4
Cabin Creek 325	Probable	3	58	Weir	2 4	19 0	400	25%	4 6
330	Probable	3	57, 67	Big Lime	5 4	3 0	330	75%	4 0
332	Probable	3	58, 68	Berea, Weir	4 1	4 0	558	100%	9 2
335	Probable	3	58, 68	Berea	1 8	4 0	540	100%	3 9
339	Probable	3	58, 68	Weir	5 1	19 0	500	50%	24 2
Total					49 1				145 0
TRIPLE STATE FIELD									
501, 502, 510	Probable	5	82, 83	Salt, Maxon, Big Lime, Inj.	12 2	3 9	330	100%	15 7
OUTLYING FIELDS IN LINCOLN, WAYNE, MINGO AND ADJOINING COUNTIES									
402	Probable	4	44	Berea	1 0	4 0	546	100%	2 2
403	Probable	4	45	Berea	1 0	4 0	558	50%	1 1
405	Probable	4	45, 54, 55	Berea	1 1	4 0	570	100%	2 5
408	Probable	4	55, 56, 65, 66	Big Lime and Berea	51 6	4 0	509	75%	78 8
411	Probable	4	55	Big Lime and Berea	0 1	4 0	550	100%	0 2
413	Probable	4	66, 75	Big Lime	1 5	3 0	330	100%	1 5
415	Probable	4, 5	73, 83	Big Lime	3 3	3 9	330	100%	4 2
419	Probable	4	74, 75	Big Lime	2 0	3 9	223	100%	1 7
Total					61 6				92 2
Grand Total					197 2				414 6

TABLE NO. 3

Rock Pressure—Averages and Production

(Arranged by Proven Pools and Areas)

SPENCER POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1913			1914			1915			1916			1917			1918		
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.
BEREA SAND																		
A													1	970	58 58	1	940	104 162
B													5	859	256 256	5	792	703 959
C										2	854	179 179	14	799	1664 1843	16	631	3043 4886
D							1	(650)	12 12	4	706	374 386	9	507	1108 1494	9	429	958 2452
E	15	666	1371 1371	18	590	1434 2805	20	523	1361 4166	21	419	3087 7253	23	287	3621 10874	23	245	2527 13401
F	10	570	985 985	8	508	278 1263	14	422	1024 2287	15	278	1766 4053	15	218	1697 5750	16	147	1648 7398
G	18	454	3001 3001	17	380	1490 4491	24	267	2528 7019	24	186	2193 9212	24	129	1249 10461	24	89	1167 11628
H	7	589	1654 1654	8	340	1205 2859	9	281	969 3828	11	220	860 4688	11	158	563 5251	11	(91)	447 5698
I	5	568	820 820	5	438	806 1626	5	376	159 1785	5	268	418 2203	5	215	689 2892	5	143	345 3237
J	4	945	325 325	7	716	1010 1335	11	504	2676 4011	12	315	1929 5940	12	178	976 6916	12	123	849 7765
K										3	512	592 592	9	312	1537 2129	9	186	1018 3147
L													1	635	217 217	1	475	1138 1355
Total or Average	59	632	8156 8156	63	495	6223 14379	84	396	8729 23108	97	418	11398 34506	129	439	13635 48141	132	382	13947 62088
SALT SAND																		
C-C							2	608	494 494	5	570	560 1054	7		1007 2061	7	476	927 2988
INJUN SAND																		
M							2	613	5 5	5	597	187 192	5		611 803	5	483	461 1264

*Number of wells having production.
Rock Pressure expressed in pounds per square inch.
Production in million cubic feet.

SPENCER POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1919			1920			1921			1922			1923			March 1924 Rock Press.	Average Initial Daily Open Flow Million Cu. Ft.	Approx. Date of Initial Drilling
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.			
BEREA SAND																		
A	2	850	240 402	3	530	723 1125	3		500 1625	3	248	264 1889	3	210	245 2134	172	2 4	1917
B	6	635	1359 2318	7	377	1394 3712	13	340	1106 4818	14	230	772 5590	15	188	676 6266	136	2 2	1917
C	20	471	2932 7818	28	265	3841 11659	30	(183)	1940 13599	32	117	1316 14915	33	94	1035 15950	66	4 5	1916
D	9	337	730 3182	9	230	861 4043	9	(186)	549 4592	9	174	499 5091	9	128	397 5488	90	3 6	1916
E	21	209	1121 14522	21	166	820 15342	20	149	773 16115	18	112	472 16587	18	95	450 17037	77	3 8	1910
F	13	109	1188 8586	12	69	441 9027	10	(68)	364 9391	10	61	229 9620	9	51	167 9787	43	4 4	1910
G	22	79	726 12354	19	60	480 12834	19	(53)	349 13183	16	45	242 13425	12	40	202 13627	34	5 8	1910
H	6	95	408 6106	7	(60)	319 6425	6	(85)	189 6614	6	60	151 6765	5	48	118 6883	45	4 1	1910
I	4	117	256 3493	4	102	162 3655	3		109 3764	3	74	95 3859	3	70	47 3906	66	3 1	1910
J	11	101	567 8332	11	86	293 8625	11	(90)	268 8893	10	65	163 9056	9	51	96 9152	44	4 5	1913
K	10	(173)	566 3733	9	128	338 4071	9	(110)	164 4235	9	80	171 4406	9	64	131 4537	55	3 4	1916
L	2	363	983 2338	7	197	771 3109	9	169	668 3777	9	128	255 4032	9	84	315 4347	79	2 6	1917
Total or Average	126	306	11096 73184	137	201	10443 83627	142	219	6979 90606	139	116	4629 95235	134	94	3879 99114	76	3 7	
SALT SAND																		
C-C	9	371	1046 4034	9	243	695 4729	7		421 5150	6	151	304 5454	6	101	177 5631	89	2 7	1915
INJUN SAND																		
M	6		364 1628	7	413	372 2000	7		341 2341	7	333	322 2663	7	307	284 2947	281	0 6	1915

*Number of wells having production.
Rock Pressure expressed in pounds per square inch.
Production in million cubic feet.

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1913			1914			1915			1916			1917			1918		
	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.
									INJUN SAND									
			498			1989			1644			1533			1886			1504
A	14	447	498	24	400	2487	25	359	4131	25	310	5664	28	(247)	7550	29	232	9054
			1105			1045			1072			1328			3031			2511
B	24	438	1105	27	421	2150	36	411	3222	42	396	4550	43	355	7581	44	334	10092
			218			362			334			257			385			504
C	7	380	218	7	365	580	8	376	914	8	363	1171	10	327	1556	10	(325)	2960
												7			214			247
C-C										1	493	7	2	480	221	2	460	468
			739			599			342			263			1116			1210
D	15	335	739	15	330	1338	15	318	1680	15	308	1943	15	(273)	3059	15	271	4269
			357			398			449			495			412			537
E	7	367	357	8	(354)	755	11	364	1204	14	355	1699	13	324	2111	15	307	2648
			878			649			525			578			1140			800
F	13	390	878	14	(395)	1527	17	377	2052	17	366	2630	18	348	3770	18	320	4570
			491			293			490			186			639			398
G	7	405	491	7	393	784	6	(389)	1274	7	(392)	1460	7	(373)	2099	6	342	2497
			205			661			1005			849			718			789
H	3	473	205	9	448	866	11	402	1871	15	385	2720	15	369	3438	15	351	4227
			547			425			360			314			1191			1321
I	5	403	547	6		972	6	379	1332	6	350	1646	8		2837	8	290	4158
															437			740
J													9	520	437	12	480	1177
			222			479			478			637			1034			766
K	7	463	222	10	456	701	10	449	1179	11	432	1816	11	(394)	2850	11	373	3616
			304			833			1111			1323			1143			619
L	3	485	304	8	457	1137	9	431	2248	9	400	3571	9	(391)	4714	9	363	5333
															154			137
M-M													2	518	154	2	503	291
			73			142			271			382			1725			1147
N	5	526	73	7	519	215	12	502	486	14	496	868	17	(455)	2593	17	427	3740
			1640			683			556			1571			1878			1612
O	12	460	1640	12	420	2323	18	419	2879	21	404	4450	30	358	6328	30	314	7940
			1033			650			226			608			2864			2016
P	23	444	1033	24	436	1683	27	425	1909	31	414	2517	34	(374)	5381	35	364	7397
			500			335			250			326			129			213
Q	6	397	500	7	376	835	7	(348)	1085	6		1411	7		1540	7	326	1753
			170			17			33			80			786			731
R	4	454	170	4		187	6	472	220	8	460	300	9	440	1086	10	399	1817
			401			106			68			213			1026			831
S	2	459	401	5	441	507	7	438	575	10	430	788	15	361	1814	15	351	2645

CLENDENIN POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1913			1914			1915			1916			1917			1918		
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.
INJUN SAND (Cont'd)																		
			243			55			90			103			747			852
T	8	472	243	8	461	298	12	452	388	17	463	491	20	452	1238	20	438	2090
			1107			1108			1115			1000			923			802
W	3	430	1107	3		2215	3	369	3330	3	350	4330	3	(314)	5253	3	(285)	6055
Total or			10731			10829			10419			12053			23578			20287
Average	168	433	10731	205	417	21560	246	404	31979	280	398	44032	325	384	67610	333	357	87897
INJUN AND SQUAW SANDS																		
			706			469			485			403			638			600
A-A M	6		706	9	415	1175	9	341	1660	8	322	2063	9		2701	9	243	3301
			363			154			251			230			180			119
Y	5	260	363	5		517	5	198	768	6	145	998	6		1178	5		1297
Total or			1069			623			736			633			818			719
Average	11	260	1069	14	415	1692	14	270	2428	14	234	3061	15		3879	14	243	4598
WEIR SAND																		
			139			103			166			166			171			42
X	2		139	2	170	242	2	150	408	6	143	574	5		745	4		787
			165			508			237			245			342			242
Z	2	378	165	3		673	2	255	910	7	242	1155	7		1497	7	179	1739
Total or			304			611			403			411			513			284
Average	4	378	304	5	170	915	4	203	1318	13	193	1729	12		2242	11	179	2526

*Number of wells having production.

Rock Pressure expressed in pounds per square inch.

Production in million cu. ft.

CLENDENIN POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1919			1920			1921			1922			1923			March 1924 Rock Press.	Average Initial Daily Open Flow Million Cu. Ft.	Approx. Date of Initial Drilling
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.			
									INJUN SAND									
A	35	197	2378 11432	49	139	3261 14693	43	(95)	2083 16776	41	113	2026 18802	37	98	1567 20369	83	1 2	1913
B	43	309	2241 12333	48	282	2267 14600	48	270	1699 16299	49	248	2175 18474	54	218	2885 21359	180	3 2	1905
C	10	286	396 2456	10	264	315 2771	10	(195)	351 3122	10	252	414 3536	10	195	544 4080	168	2 8	1908
C-C	2	(415)	193 661	2	405	210 871	2		120 991	2	370	129 1120	2	340	204 1324	317	2 1	1916
D	15	241	1364 5633	15	210	786 6419	15		1083 7502	15	183	1415 8917	16	161	1100 10017	151	2 8	1908
E	16	283	397 3045	17	262	343 3388	17	238	335 3723	17	220	344 4067	17	198	362 4429	166	2 4	1910
F	18	302	878 5448	18	283	906 6354	19	(275)	492 6846	22	251	1318 8164	24	214	1201 9365	184	4 7	1906
G	7	(331)	265 2762	7	300	307 3069	7	(291)	282 3351	7	271	437 3788	7	239	235 4023	215	4 9	1904
H	15	340	831 5058	15	307	794 5852	16	(318)	1108 6960	17	271	1469 8429	21	(230)	1725 10154	229	1 9	1913
I	8	257	1242 5400	8	243	923 6323	8		961 7284	8	211	1112 8396	10	190	924 9320	171	1 5	1910
J	12	441	750 1927	14	389	1131 3058	16	361	1358 4416	16	314	1695 6111	16	281	1576 7687	255	3 5	1917
K	11	356	577 4193	11	331	714 4907	11	(316)	642 5549	11	282	949 6498	15	253	1024 7522	239	3 0	1908
L	9	349	640 5973	10	328	875 6848	10	300	929 7777	10	272	1306 9083	12	(245)	1905 10988	238	3 5	1904
M-M	2	488	184 475	2	485	146 621	2	475	114 735	3	450	167 902	3	433	326 1228	405	1 0	1917
N	19	409	1041 4781	19	382	1064 5845	19	(366)	862 6707	19	330	1310 8017	23	303	1337 9354	280	1 5	1909
O	30	305	1281 9221	32	281	1409 10630	24	252	1338 11968	36	221	1603 13571	39	192	1258 14829	179	5 5	1909
P	35	344	1490 8887	36	308	1505 10392	38	293	1114 11506	43	267	1730 13236	48	242	1550 14786	220	3 4	1905
Q	7		203 1956	7	287	170 2126	7	(262)	111 2237	7	255	217 2454	7	234	160 2614	218	2 1	1911
R	10	377	577 2394	10	342	545 2939	12	357	410 3349	13	302	780 4129	16	261	821 4950	238	2 0	1909
S	15	307	572 3217	15	291	635 3852	16	258	490 4342	18	235	821 5163	20	215	722 5885	194	3 8	1909

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1919			1920			1921			1922			1923			March 1924 Rock Press.	Average Initial Daily Open Flow Million Cu. Ft.	Approx. Date of Initial Drilling
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.			
INJUN SAND (Cont'd)																		
			819			841			908			1849			1568			
T	21	397	2909	23	379	3750	31	(380)	4658	33	323	6507	36	290	8075	285	1 1	1910
			667			532			324			238			417			
W	3	272	6722	3	267	7254	14		7578	15	263	7816	15	(252)	8233	264	2 4	1911
Total or			18986			19679			17114			23504			23411			
Average	343	334	106883	371	308	126562	385	295	143676	412	268	167180	448	240	190591	222	2 7	
INJUN AND SQUAW SANDS																		
			767			585			296			495			335			
A-A	9	181	4068	9	164	4653	9		4949	8	103	5444	8	90	5779	85	2 9	1911
									126			765			794			
M							4	479	126	7	364	891	8	314	1685	305	1 9	1921
			140			152			141			192			283			
Y	5	95	1437	5	83	1589	5		1730	5	59	1922	4	58	2205	75	4 9	1913
Total or			907			737			563			1452			1412			
Average	14	138	5505	14	124	6242	18	479	6805	20	175	8257	20	154	9669	155	3 2	
WEIR SAND																		
			76			85			104			129			109			
X	3	89	863	3	76	948	3		1052	3	52	1181	3	(45)	1290	54	1 7	1913
			297			244			210			213			170			
Z	8	141	2036	8	122	2280	8		2490	8	97	2703	8	88	2873	75	1 5	1913
Total or			373			329			314			342			279			
Average	11	115	2899	11	99	3228	11		3542	11	75	3884	11	67	4163	65	1 6	

*Number of wells having production.

Rock Pressure expressed in pounds per square inch.

Production in million cubic feet.

KANAWHA POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1913			1914			1915			1916			1917			1918		
	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	No.• of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.
A															452			413
													4	405	452	4	305	865
B															263			1101
													3	417	263	3		1364
C															333			1489
													3	488	333	4	345	1822
D															189			234
													2	460	189	2	350	423
E															842			2633
													7	468	842	10	371	3475
F												26			374			1231
										1		26	3	480	400	6	407	1631
Total or Average												26			2453			7101
										1		26	22		2479	29		9580

•Number of wells having production.

Rock pressure expressed in pounds and square inch.

Production in million cubic feet.

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1919			1920			1921			1922			1923			March 1924 Rock Press.	Average Initial Daily Open Flow Million Cu. Ft.	Approx. Date of Initial Drilling
	*No. of Wells	Ave Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.			
A	8		568 1433	7		261 1694	9		344 2038	9	30	137 2175	9		101 2276		4 381	1917
B	4	305	669 2033	4		590 2623	4		465 3088	4	158	494 3582	4	118	250 3832	100	2 876	1917
C	4		898 2720	4		660 3380	5	(280)	352 3732	4	256	680 4412	4	225	605 5017	Est. 190	3 193	1917
D	6	203	190 613	13	178	1269 1882	12	(81)	699 2581	13	60	527 3108	13	50	351 Est. 3459	40	2 024	1917
E	10	267	2499 5974	10		2725 8699	10	170	1413 10112	11	147	1077 11189	11	121	920 12109	100	6 877	1917
F	6	(243)	1591 3222	9	348	1765 4987	12	313	2104 7091	12	245	1987 9078	12	225	1875 10953	191	3 060	1917
Total or Average	38		6415 15995	47		7270 23265	52		5377 28642	53		4902 33544	53		4102 37646		3 735	

*Number of wells having production.
Rock Pressure in pounds per square inch.
Production in million cubic feet.

TRIPLE STATE POOL

SUMMARY SHOWING

ROCK PRESSURE AVERAGES AND PRODUCTION

Well No.	ROCK PRESSURES												1922 Calculated Production Mil. Cu. Ft.	1923 Calculated Production Mil. Cu. Ft.	Initial Open Flow Mil. Cu. Ft.	Initial Rock Press.	Date Drilled	Producing Sand
	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924						
68				158	150	130	•125	115	125	80	(58)	70	5	10	2 007	275	1899	B. L. & Inj.
88				180		165		130	(130)	95	(75)	92	20	36	1 108	275	7-1899	Max. & B.L.
98				165	160	(180)	135	127	155	110	(78)	105	16	27	1 452	260	Before 1912	Injun
																130 to 180	12-20-04	B. L. & Salt
101							Abd.											
105				(250)	(240)	285	270	260	225	(170)	200	245	3	6		320	3-3-05	Big Lime
112				•485	•485	483	475	471	476	400	410	410	42	68	1 411	(370)	1-15-06	Injun
327	•220			155	•140	(117)	133	116	(130)	73	85	80	6	9	2 000	240	7-9-11	B. L. & Inj.
409	•250			150	•140	(117)	124	•130	(155)	75	90	90	15	20	232	267	10-3-12	Injun
446	•225			165	140	125	(105)	•120	115	60	37	50	4	5	3 893	225	12-10-12	Injun
447	•205					128	125	•130	138	75	60	80	11	17	1 360	205	1-20-13	Inj.& Squaw
450						(172)	•190	(160)	179	150	165	150	9	14		230	2-26-13	Berea
529	480			424	•450	•450	415	•440	480	430	385	400	23	31	605	485	8-7-12	Injun
531	410			375		310		280	230	•222	(265)	220	11	18	387	410	9-11-13	Berea
535						Abd.											7-23-13	Big Lime
547				•225	•200	175	170	140	(185)	120	110	125	32	56	839	405	1-3-14	Inj.& Squaw
744				455	•460	462	•450	441	439	D. O.	375	D. O.	1	23	350	355	8-21-16	Injun
854						458		433	(455)	340	365	360	33	44	500	370	3-19-14	Big Lime
855						220		190	(264)	110	105	120	7	6	528	455	5-28-15	Big Lime
59						342	336		(378)	Abd.					850	420	9-4-97	Max. & B.L.
60						211	173	130	192	120	125	104	5	10	4 000	360	1899	Big Lime
64				(163)	•175	167	157	•157	155	90	(65)	69	7	15	3 988	310	4-7-02	B.L.& Inj.
65							Abd.								637	248	3-24-04	Injun
66				238	•210	194	158		135	113	130	125	2	6	2 218	265	8-3-99	Big Lime
67				161	•145	(125)	137	•132	128	85	72	71	3	4	1 914	270	1899	Injun
70				153	145	Abd.											10-15-99	Maxon
74				153	146	125	125	121	120	118	•112	109	4	6	2 000	175	6-29-1900	Maxon
75	450			406	•390	371	280			•230	225	196	10	8	351	450	11-23-13	Big Lime
76				154		(112)	120	115	110	117	D.O.		2		3 000	188	9-21-00	Maxon
78							Abd.								970	460	10-1900	Maxon
84				161			106	85	69	75	D.O.	75	3	4	2 880	160	1-21-01	Maxon
86				153	145	(103)	130	100	80	(122)	75	D.O.	4	8	2 807	155	10-21-01	Maxon
87				159	112	106	105	D.O.			D.O.				2 166	(175)	12-7-01	Maxon
92				•300		•300	•300		300	265	275	275	11	28	970	400	11-16-02	Maxon
93	510			•430	•390	350	337	318		221	257	250	3	5	151	510	5-23-13	B. L. & Inj.
94				(161)	•175	168	155	•155	(154)	90	60	74	4	4	2 738	(280)	1-11-04	Injun
95						341	320		307	255	•240	235	5	6	865	(262)	2-3-12	Big Lime
96	•245			182		(124)	125	•120	115	(30)	52	67	2	1	476	260	12-2-12	Big Lime
97				197			150	125	125	80	D.O.	D.O.	4	1	800	(265)	7-27-04	Maxon
102				270					270	260	D.O.	D.O.	5		585	390	7-11-05	Big Lime
104				170	(145)	160	147	135	(152)	95	75	79	4	4	9 419	(270)	1-28-05	Injun
106				(230)	(200)	280	255	185	(267)	144	150	100	9	22	4 073	453	5-16-05	B.L. & Max.
107				180	•175	174	170	•170	(175)	137	135	138	4	6	3 926	450	7-12-05	B.L. & Inj.
108				175		(134)	135	125	120	100	95	86	2	3	800	(275)	8-29-05	Max.& B.L.

TRIPLE STATE POOL

SUMMARY SHOWING

ROCK PRESSURE AVERAGES AND PRODUCTION—Continued

Well No.	ROCK PRESSURES												1922 Calculated Production Mil. Cu. Ft.	1923 Calculated Production Mil. Cu. Ft.	Initial Open Flow Mil. Cu. Ft.	Initial Rock Press.	Date Drilled	Producing Sand
	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924						
109							Abd.								134	345	8-24-05	Injun
110						Abd.									702	370	8-10-05	Maxon
113				(185)	(135)	164	158	140	(162)	100	92	103	6	14	6 313	380	2-7-06	Big Lime
408	•275			250		230	190	165	(189)	(108)	140	•120	1	1	096	310	8-21-12	Maxon
502	230			157		125	131	•125	121	76	62	75	3	8	465	230	4-11-13	Big Lime
592				289		280			295	262	270	280	6	14	1 136	295	3-14-14	Maxon
647				274		250	243	219	(270)	205	220	215	9	21	452	288	11-9-14	Maxon
648						252	205	(131)	203	(100)	(100)	125	2	2	500	170	4-3-18	Big Lime
652				370	•310	249	210		213	(110)	(102)	135	1	1	3 147	440	1-16-15	Big Lime
720			425	•410	•400	390	•385	•385	385	335	325	321	9	21	300	425	10-20-15	Big Lime
765				355	•335	321	320	280	(307)	265	257	250	6	12	075	350	6-15-15	Big Lime
822				365		294	263		232	195	185	180	17	37	1 361	365	9-9-16	Maxon
823						305	•280		268	150	150	111	2	9	744	(210)	10-31-16	Big Lime
847				•290		195	122	101	95	70	62	65	2	3	559	275	12-30-16	Maxon
868					190	(126)	190	180	(111)	170	120	75	1	18	528	170	4-24-17	Maxon
887					295	240	210	200	D.O.		D.O.	154	1	1		295	5-26-17	Maxon
890					346	306	•280	260	243	200	180	175	23	40	1 350	320	4-13-17	Maxon
922					380	156	135	108	111	80	•75	75	1	1	134	380	5-18-17	Maxon
923						209	(160)	185	188	168	165	(215)	6	10	287	220	8-2-17	Big Lime
959					155		103		55	D.O.	D.O.	60			3 750	155	9-28-17	Maxon
995						135	•125	•115	110	100	90	83	23	33	304	250	10-13-17	B.L. & Inj.
1004					140		101	86	55	70	63	37	6	16	3 959	140	9-22-17	Maxon
Total No. Wells	3500		425	9339	7084	10781	10184	8245	7362	7381	6921	7289	456	793	95 552			
Ave	11		1	37	29	43	50	44	38	47	43	50	55	53	59			
Cum. Prod. (Mil. Cu.Ft.)	318		(425)	252	244	251	204	187	194	157	161	146			1 620			
	373	1,236	2,862	4,971	7,757	9,286	11,205	13,115	14,286	14,742	15,535							

•Estimated.

D. O.—Well drowned out.

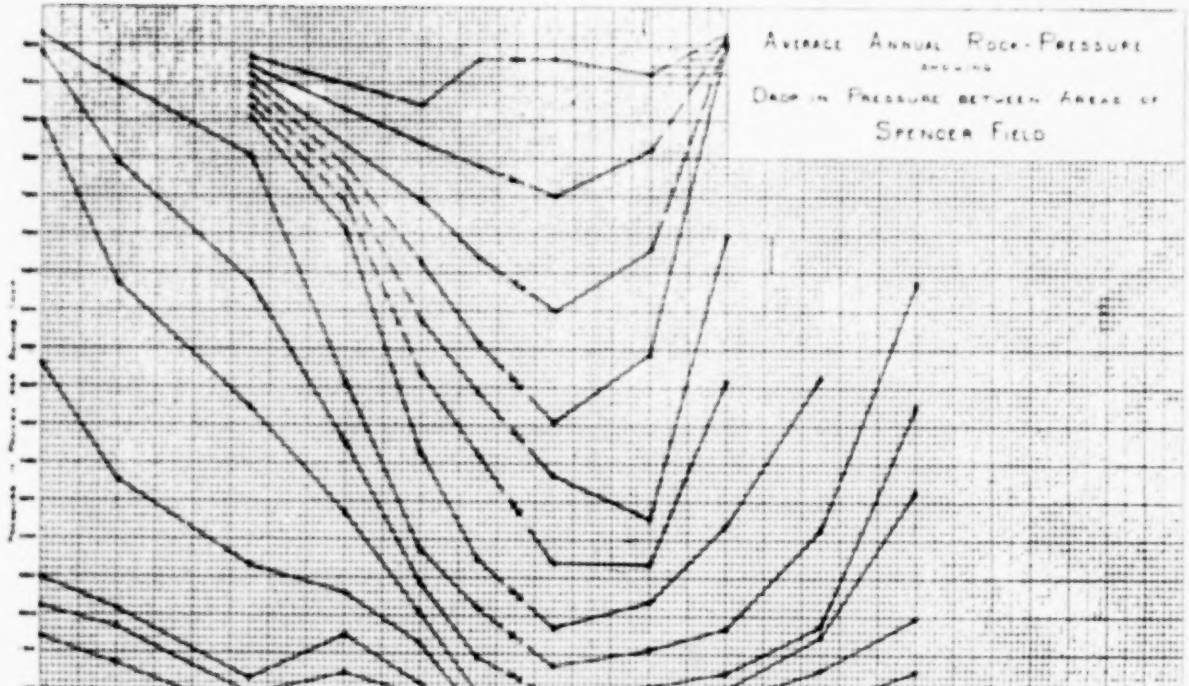
SECTION III

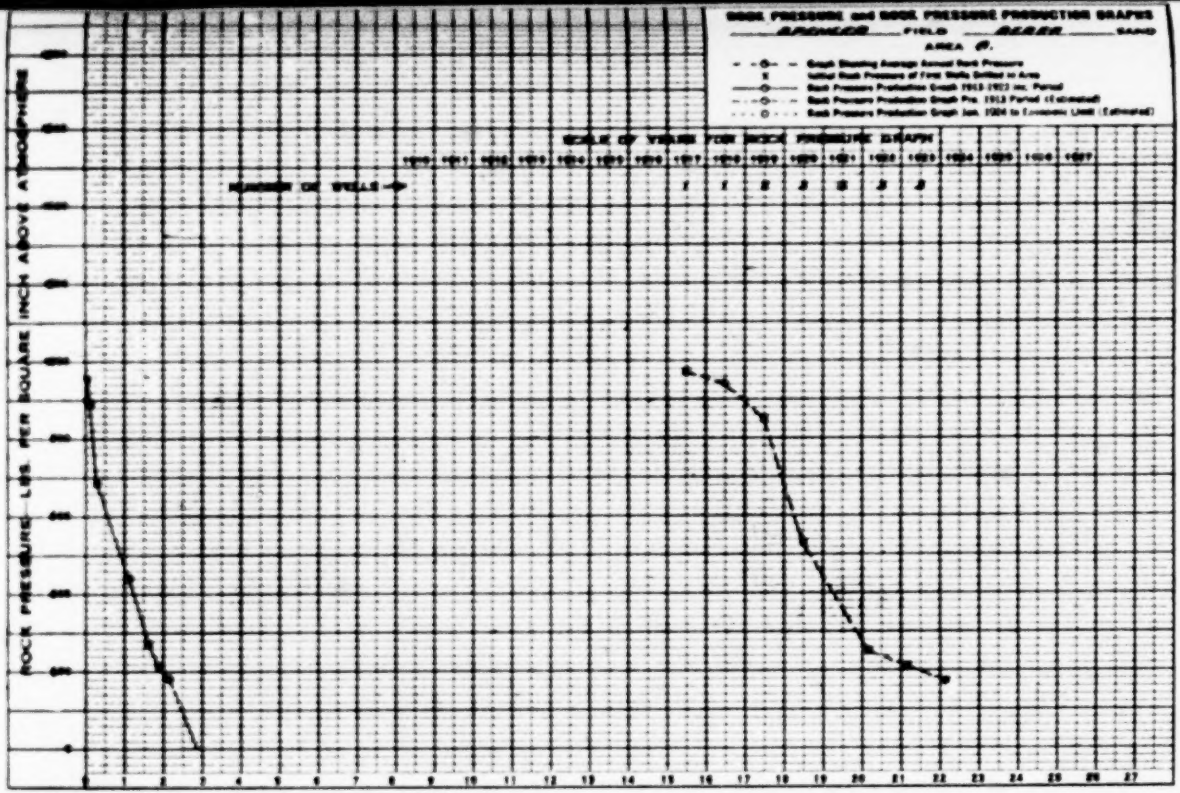
PRODUCTION GRAPHS

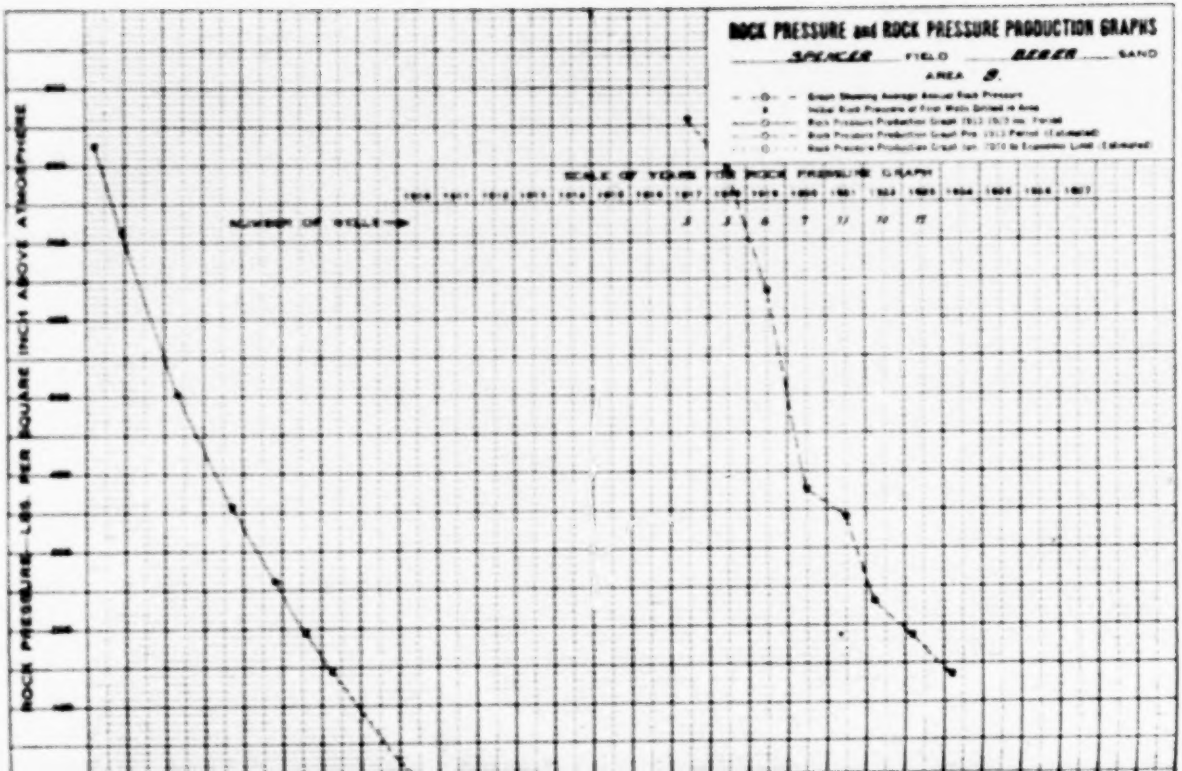
Rock Pressure Drop per Mile—Spencer Pool

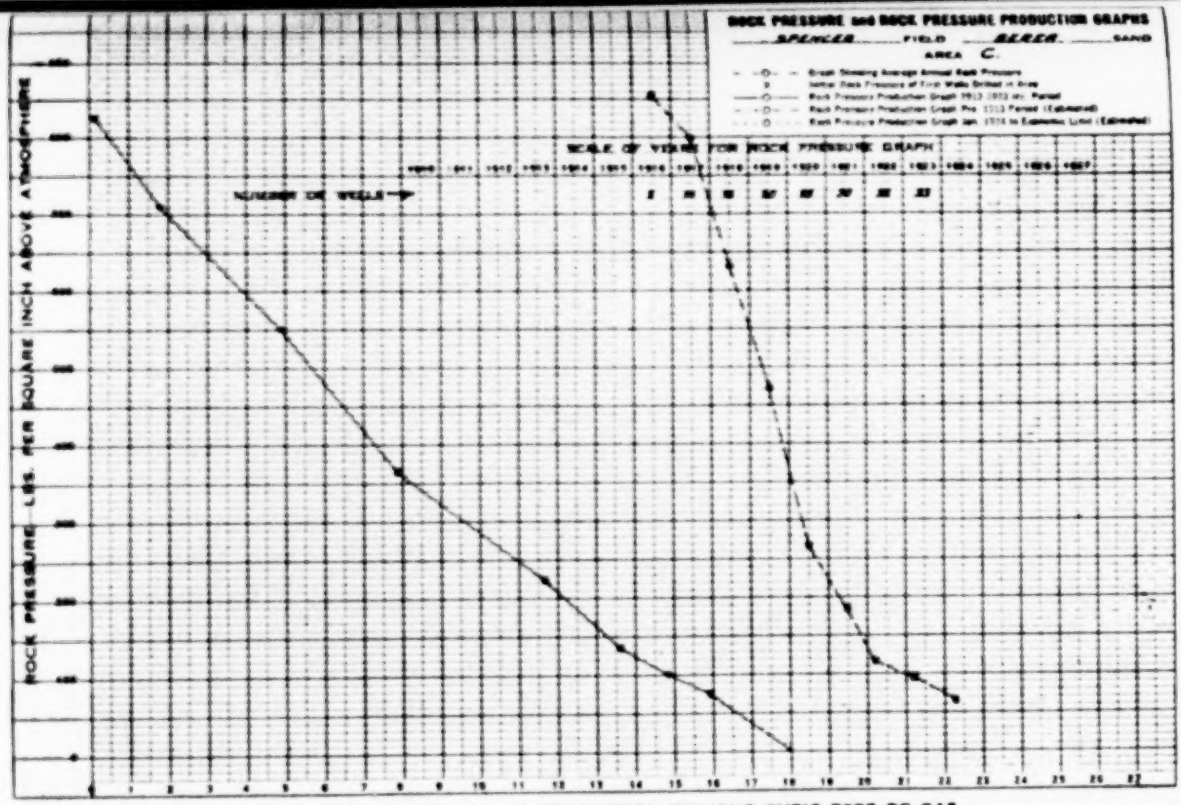
Rock Pressure and Rock Pressure—Production Graphs

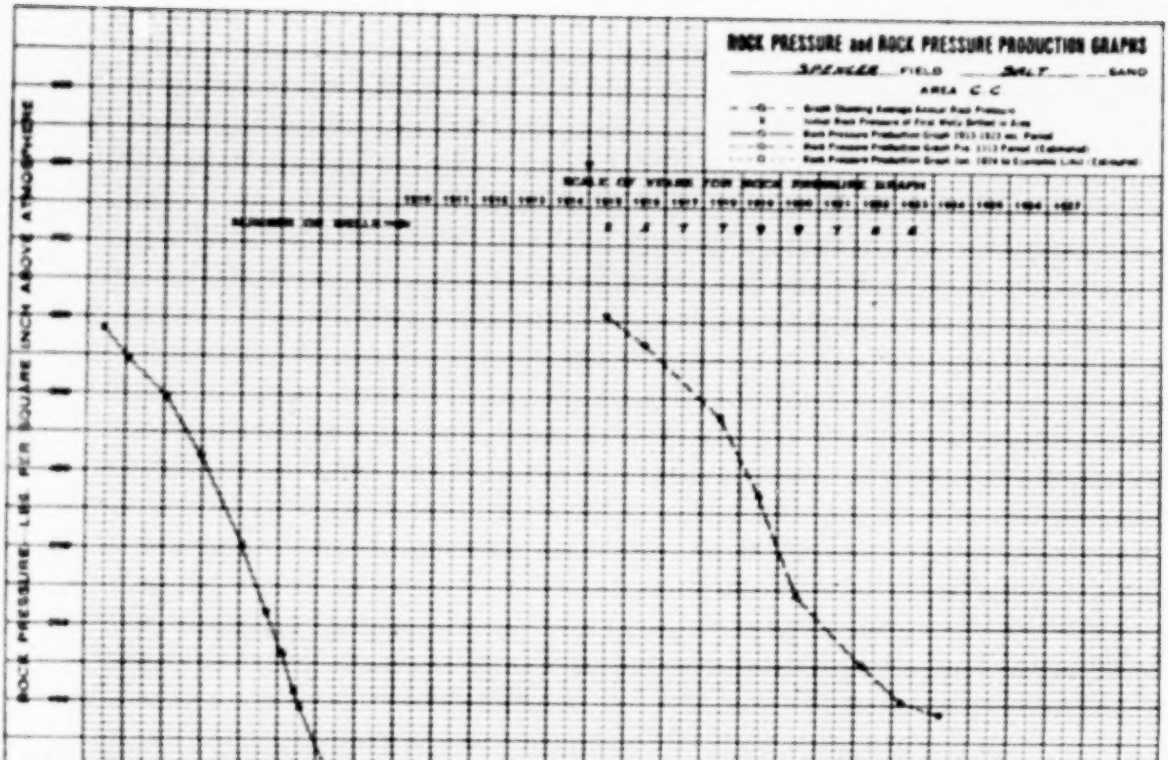
(Arranged by Fields and Areas)

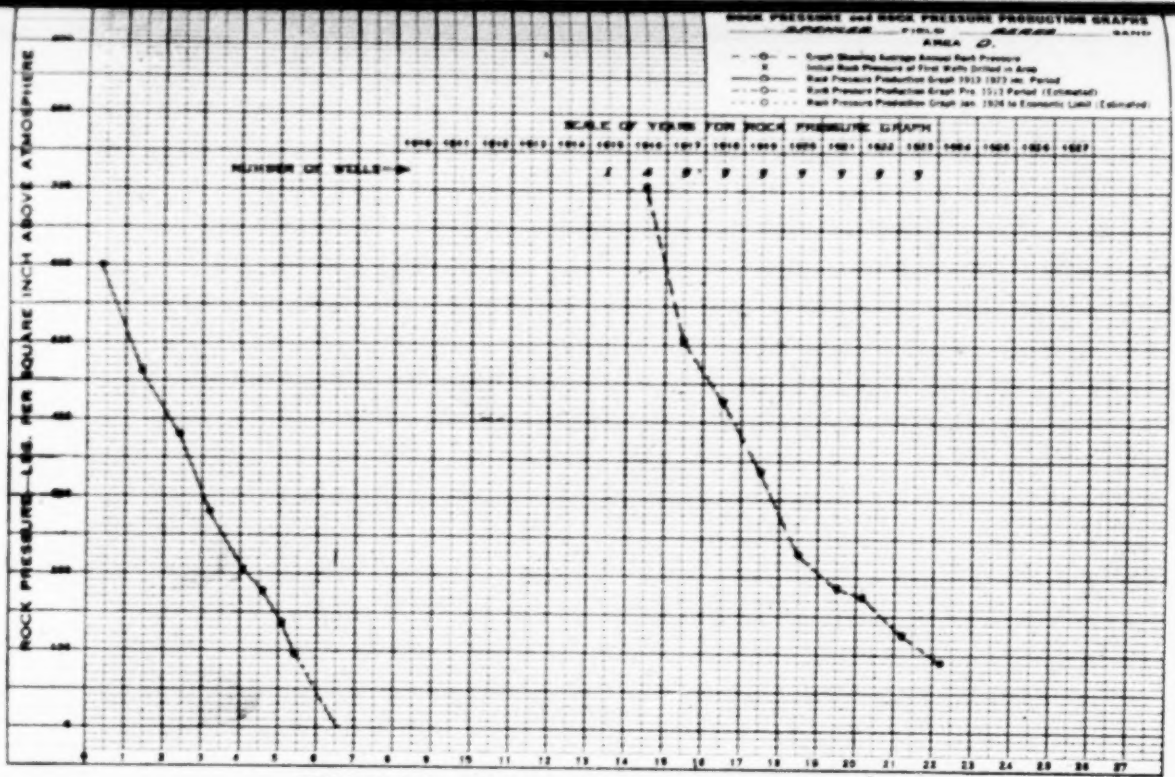

Average Annual Rock-Pressure
and the
Drop in Pressure between Areas of
Spencer Field

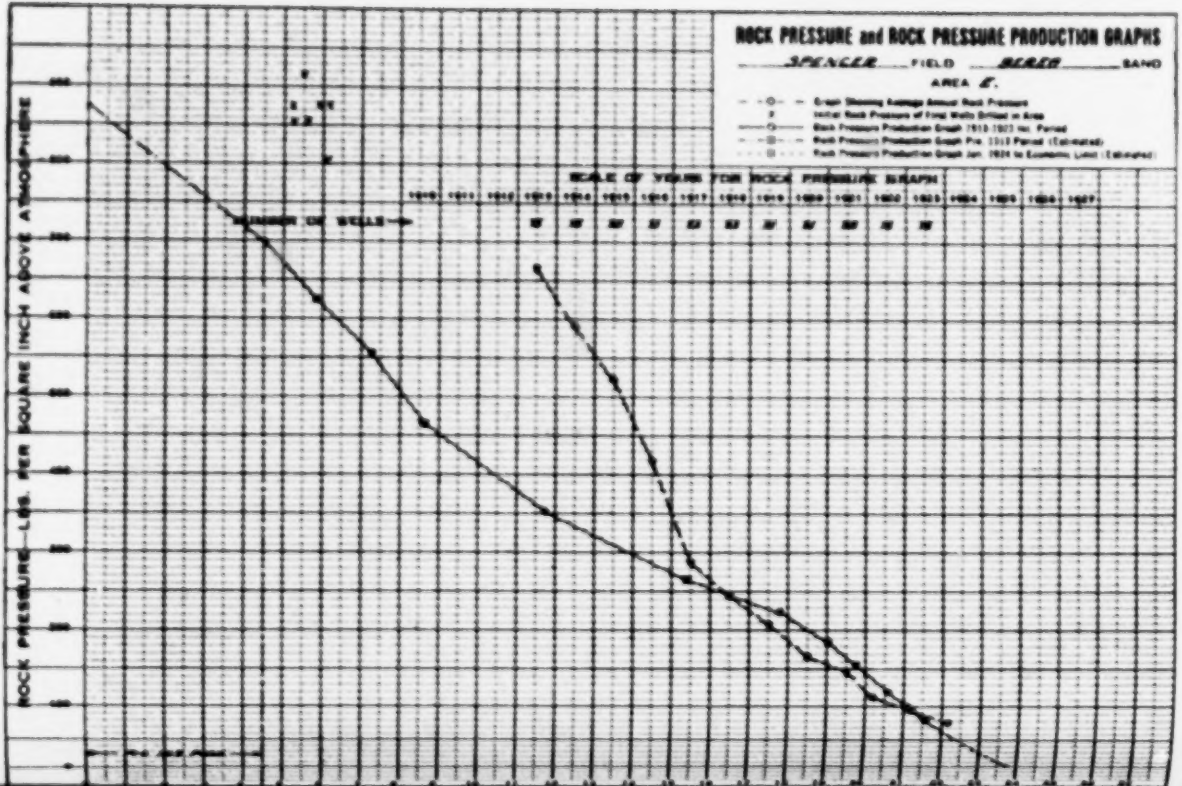

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
ARCHER FIELD ARBUCKLE SAND
AREA B.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph For 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917
NUMBER OF WELLS
1 1 2 3 3 3 3
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA B
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
NUMBER OF CYCLE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
1908 1911 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
3 3 6 7 11 11 11

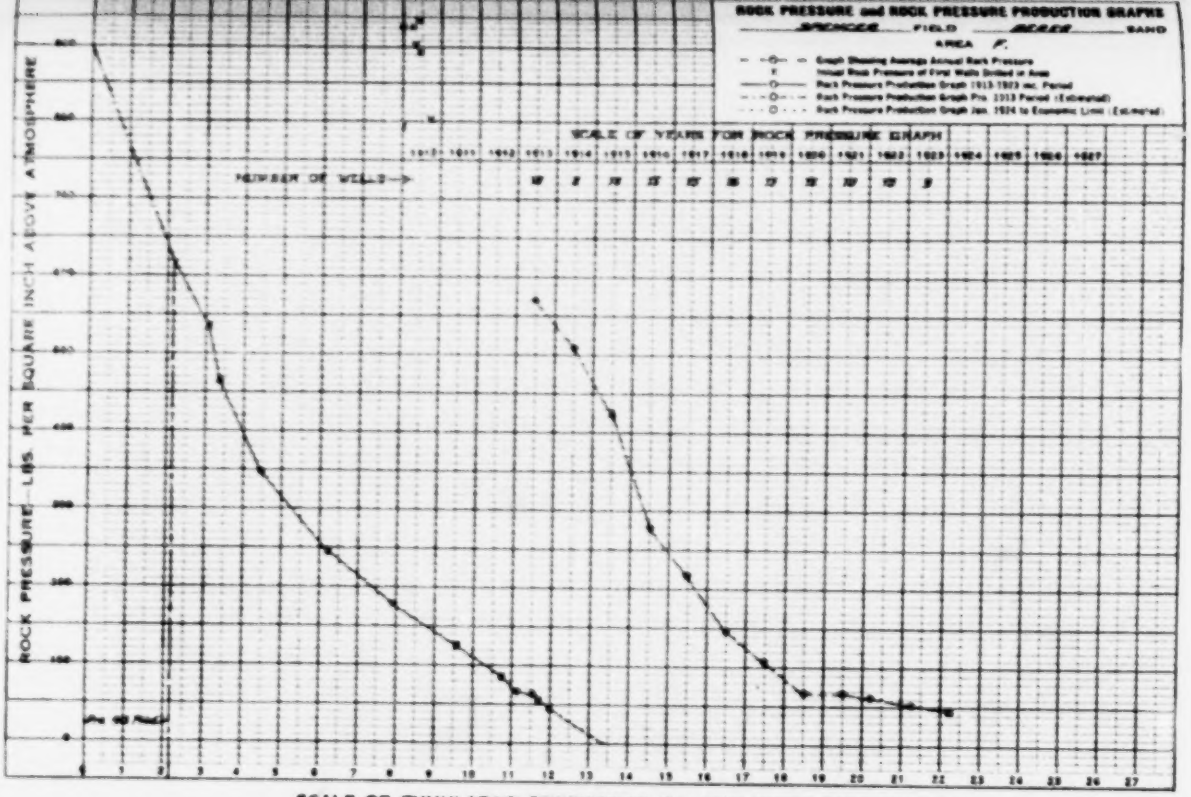

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA C
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

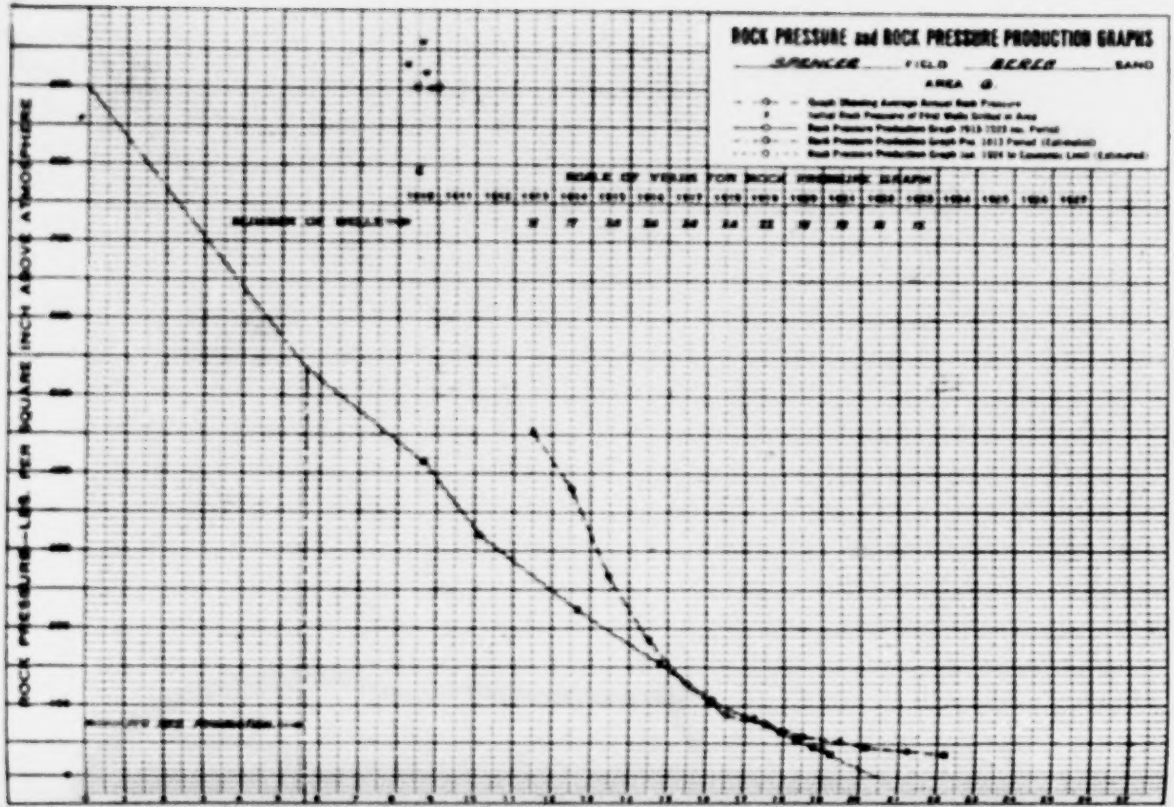

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD SALT SAND
AREA C C
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH

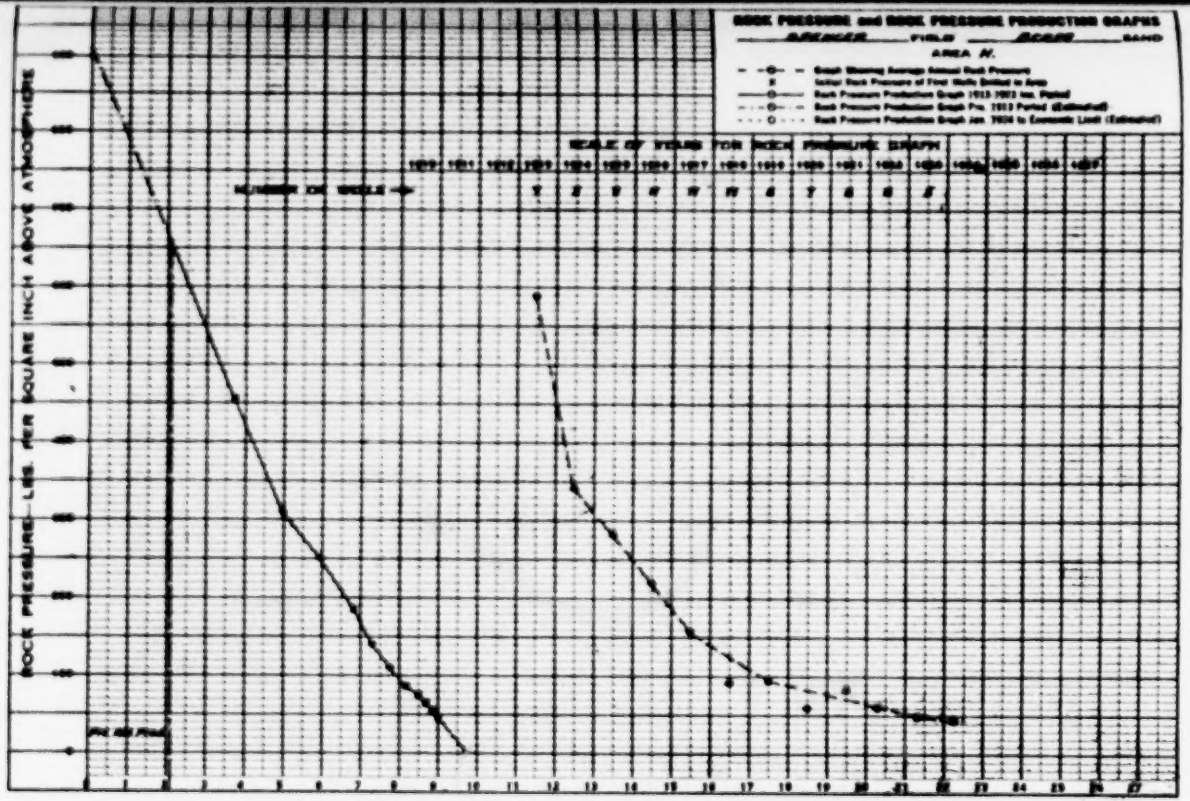

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA D.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

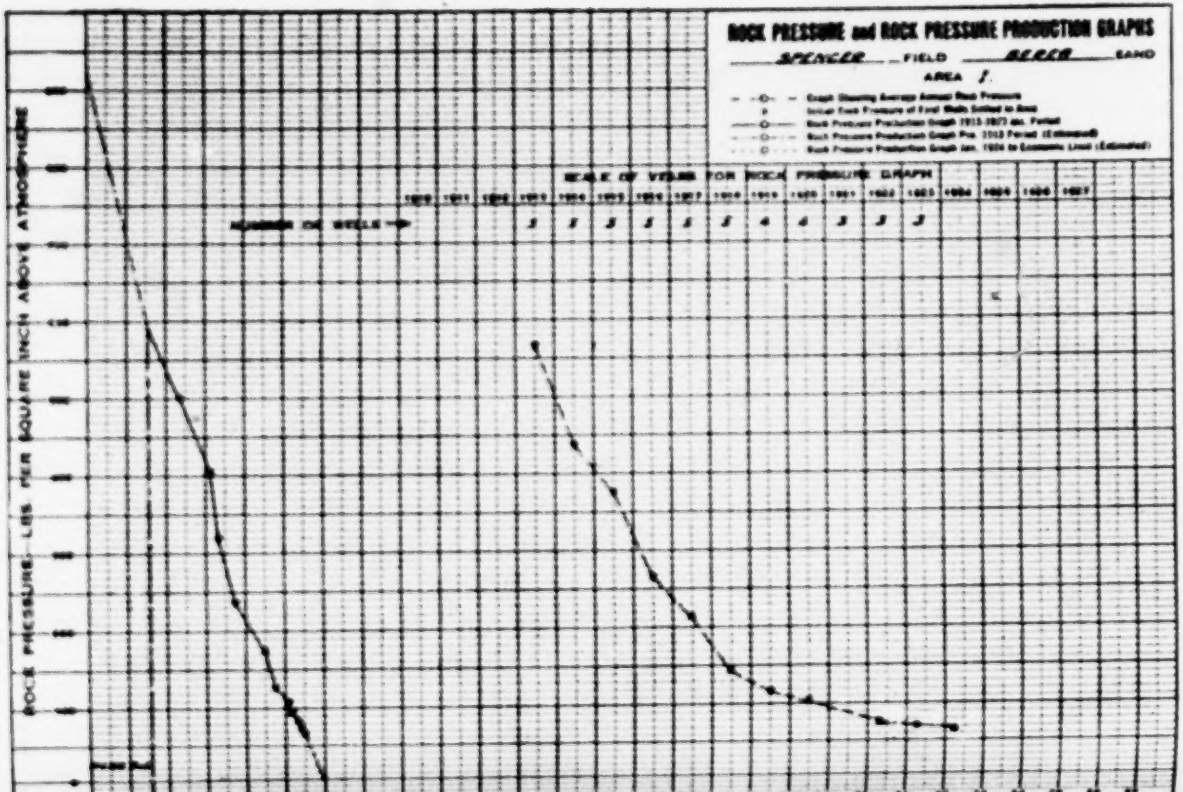

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA E.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE

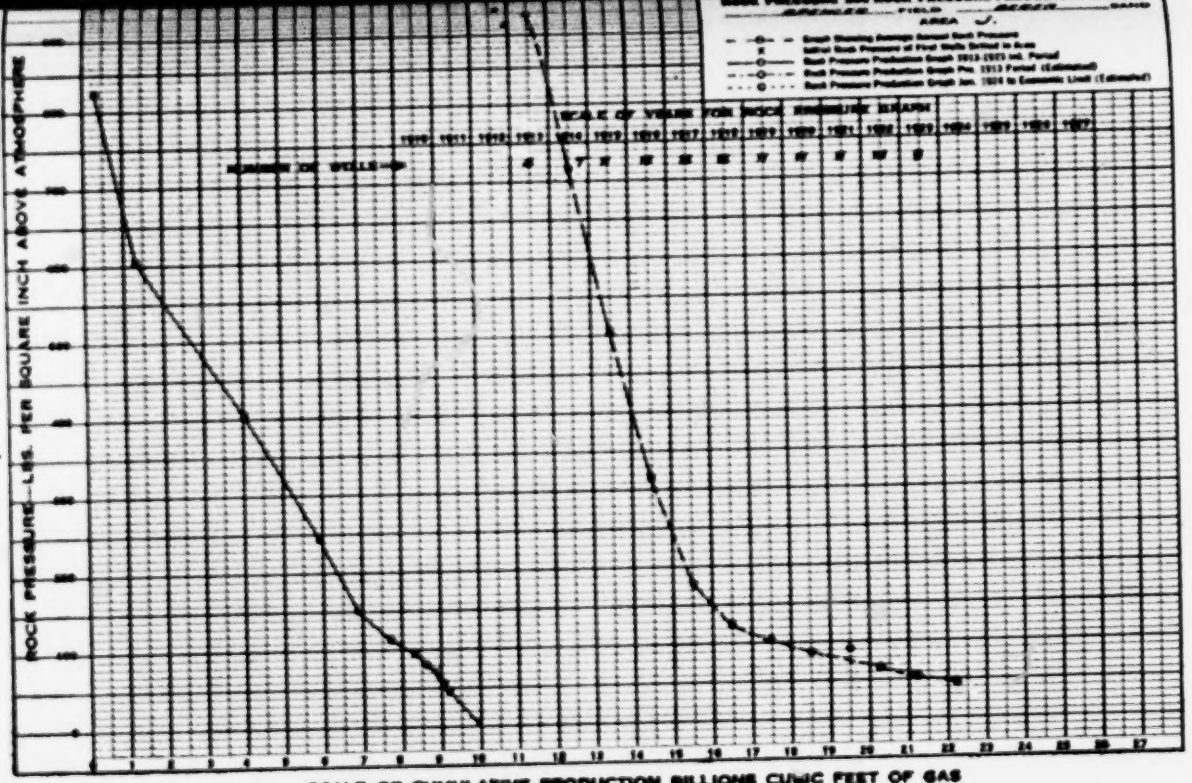
89

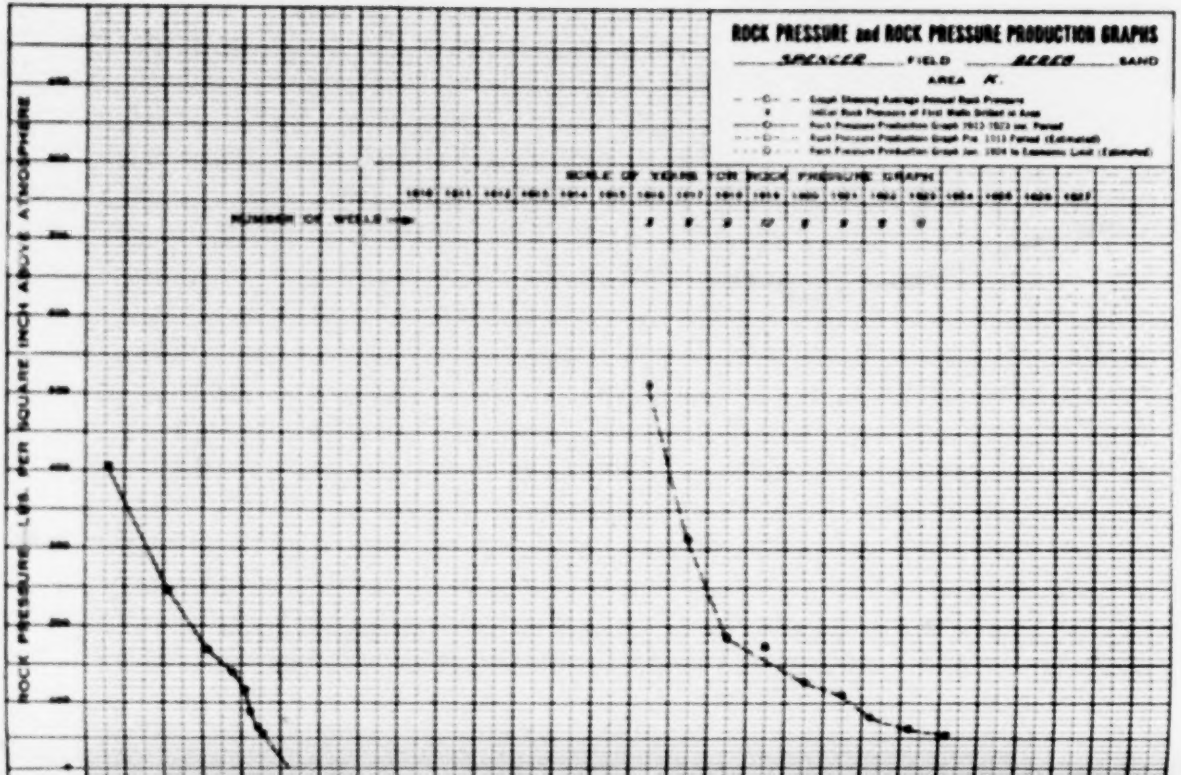

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
FIELD
SAND
AREA
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

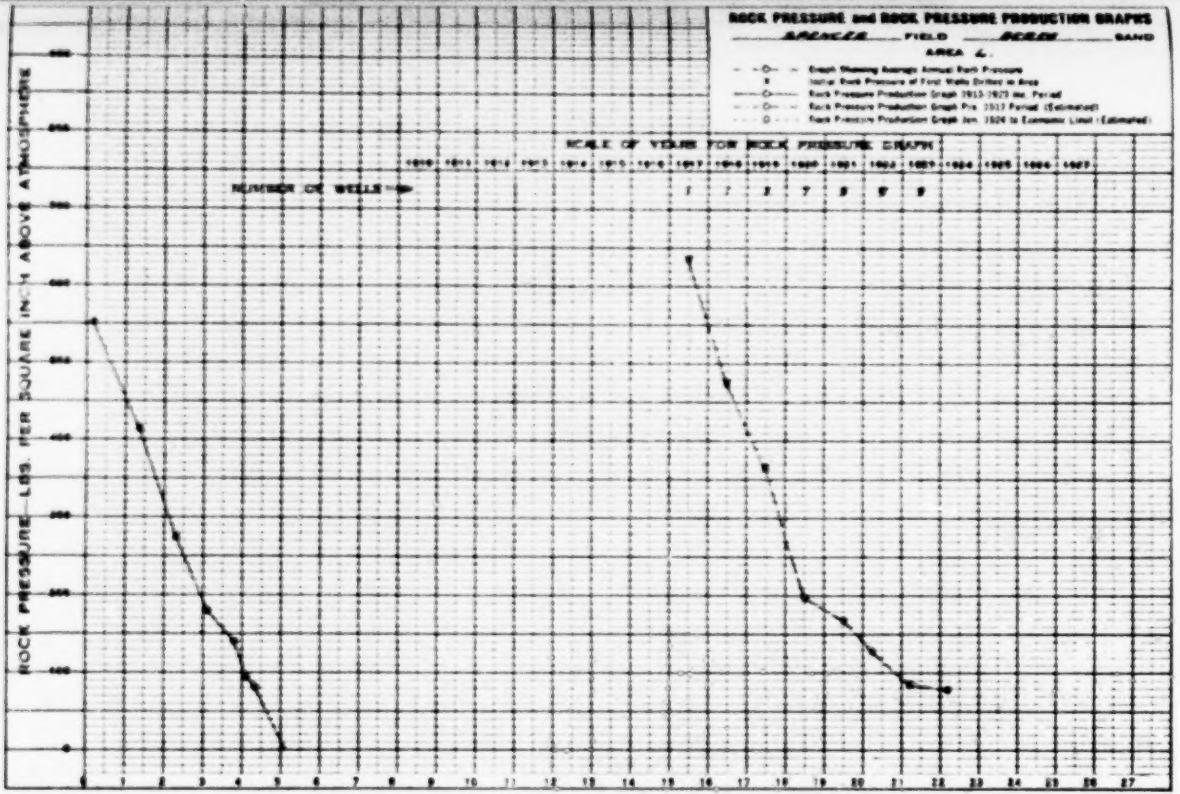

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD ACREA SAND
AREA B
ROCK PRESSURE—LBS PER SQUARE INCH ABOVE ATMOSPHERE

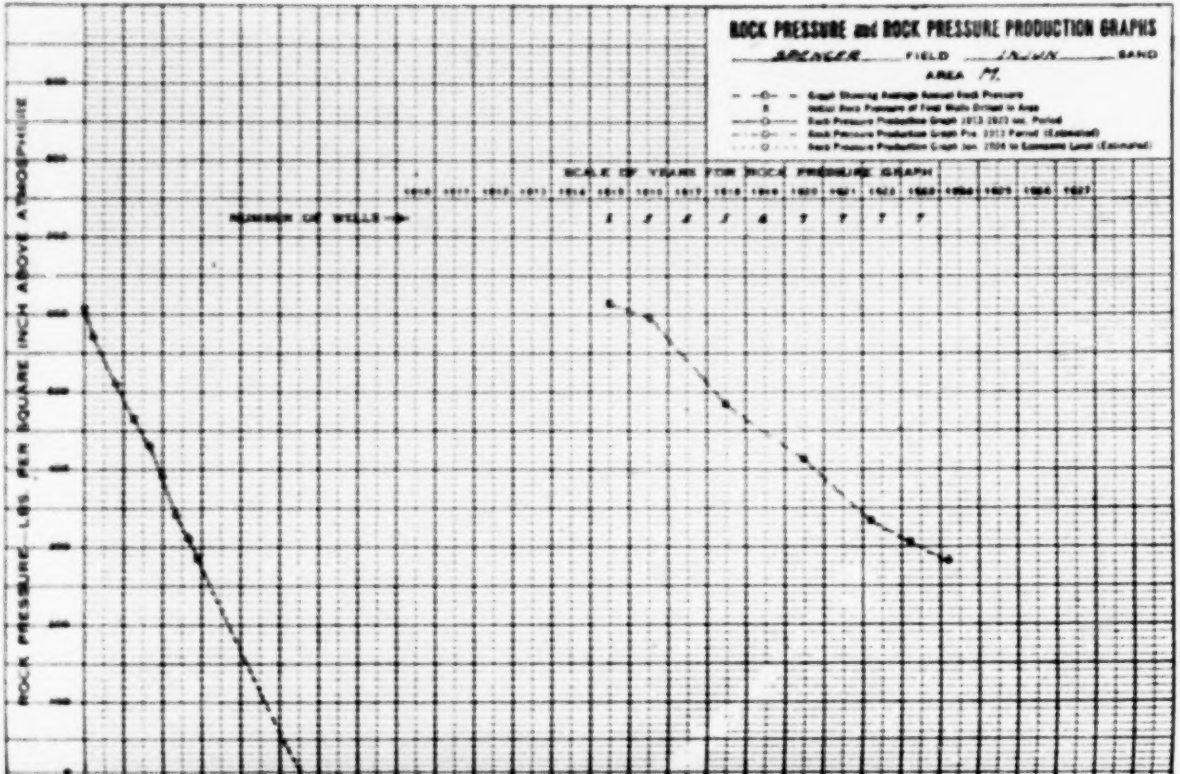

ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS
AREA N.


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA 1.
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS

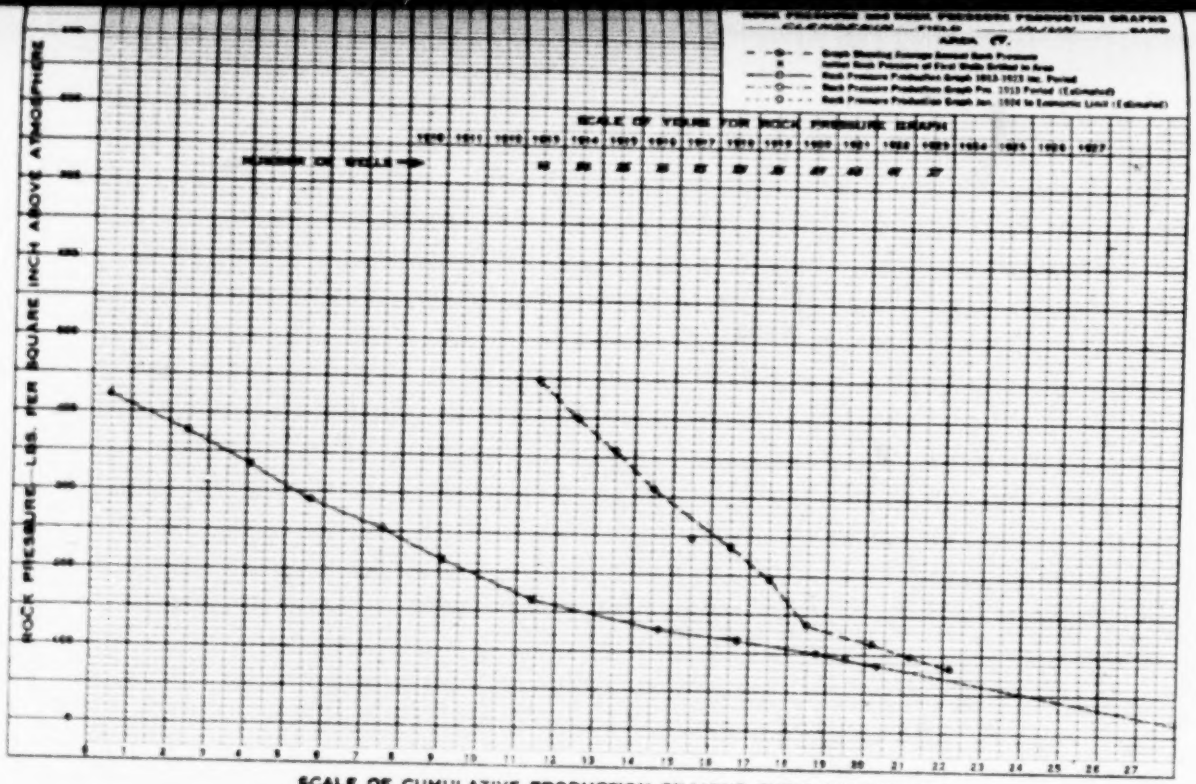

ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

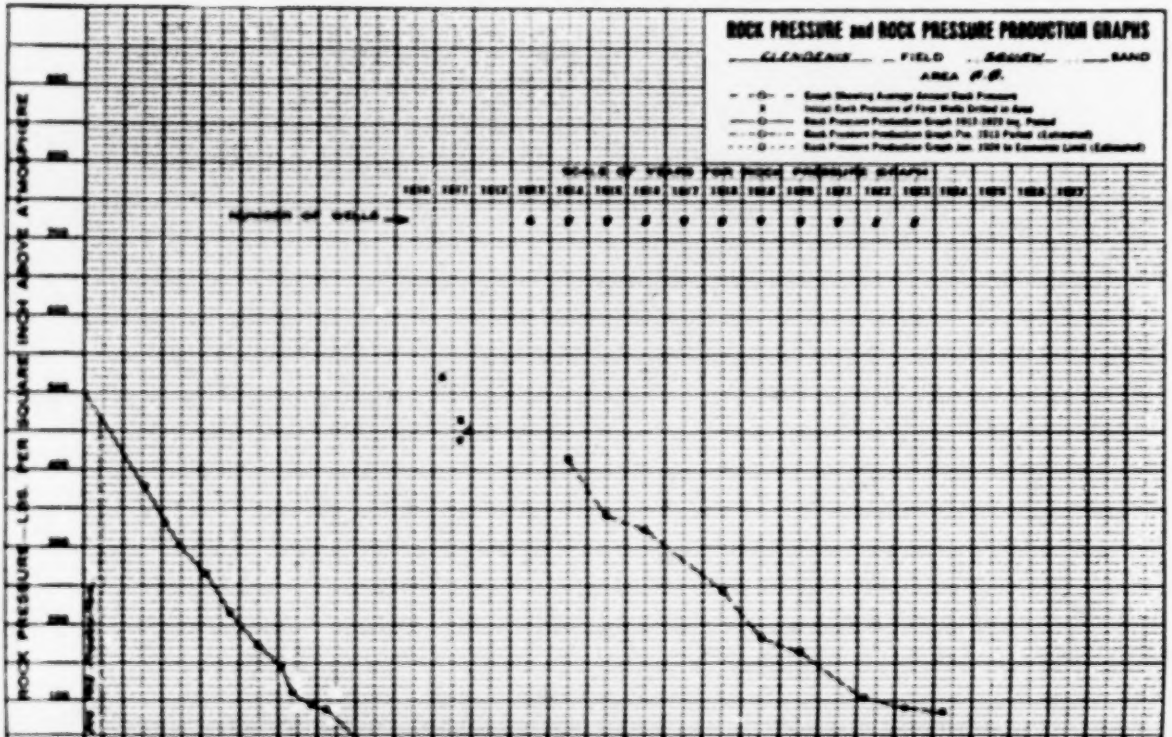

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA K
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE

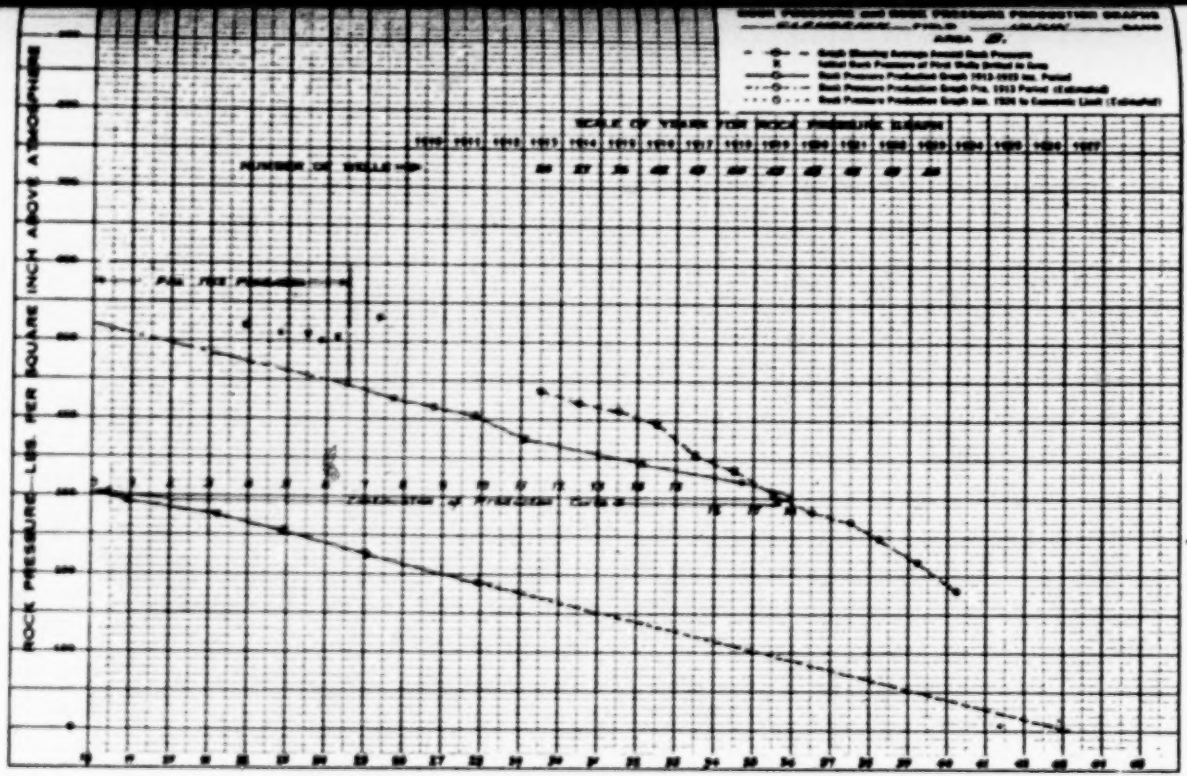

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
ARKANSAS FIELD BOSSIER SAND
AREA 4.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph Pro. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

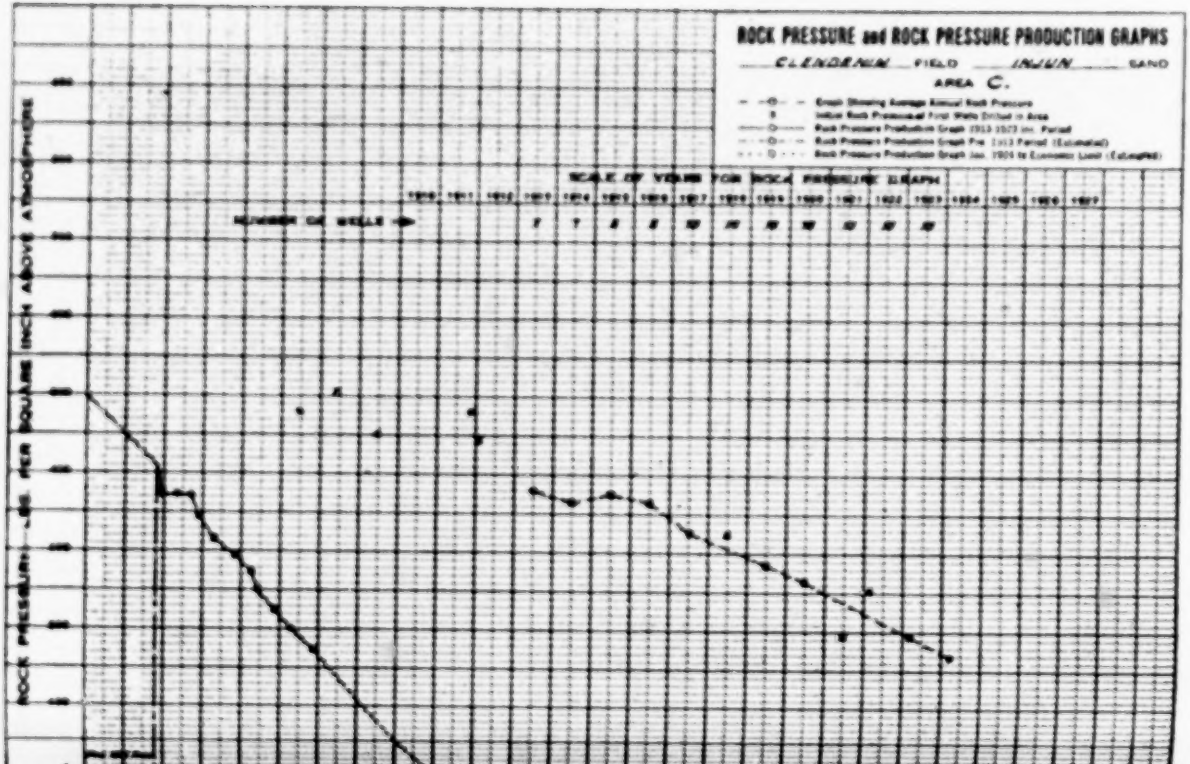

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
ARCHER FIELD JOHN SAND
AREA M.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
1 2 3 3 4 7 7 7 7
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE

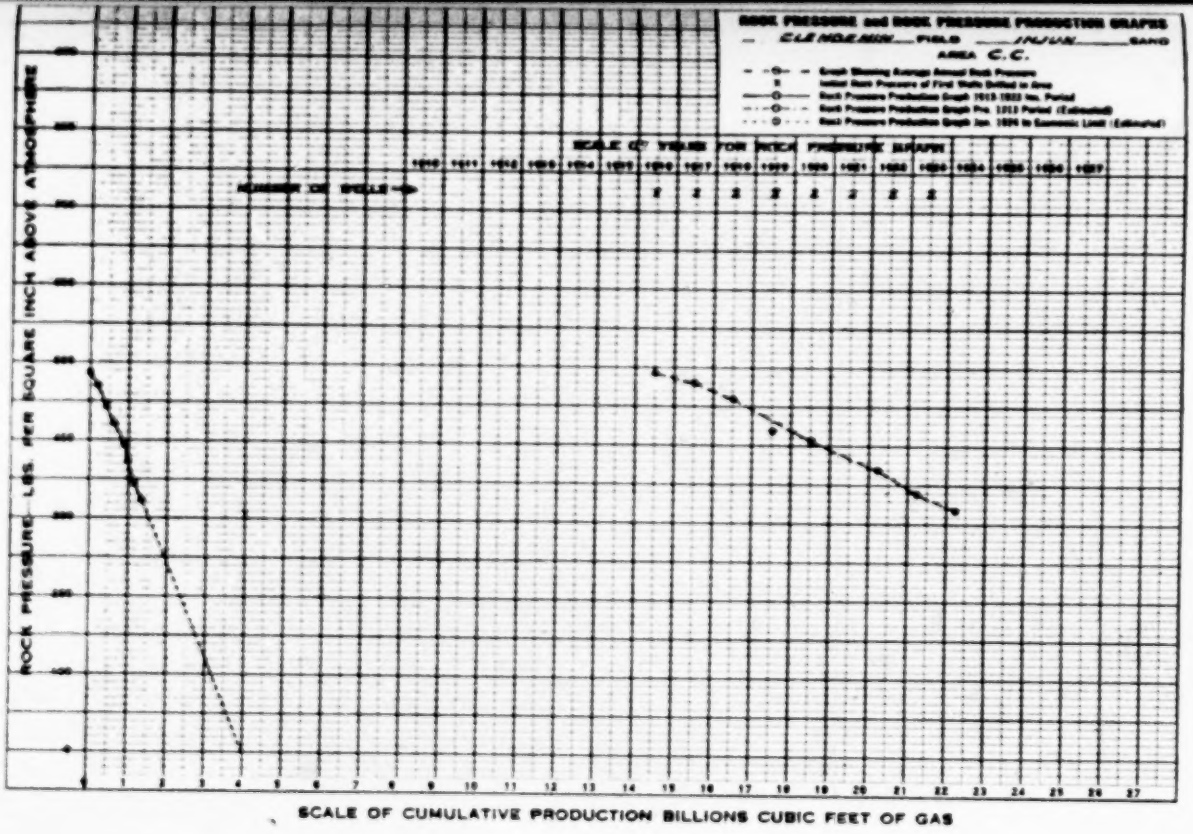
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF VOLUME FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

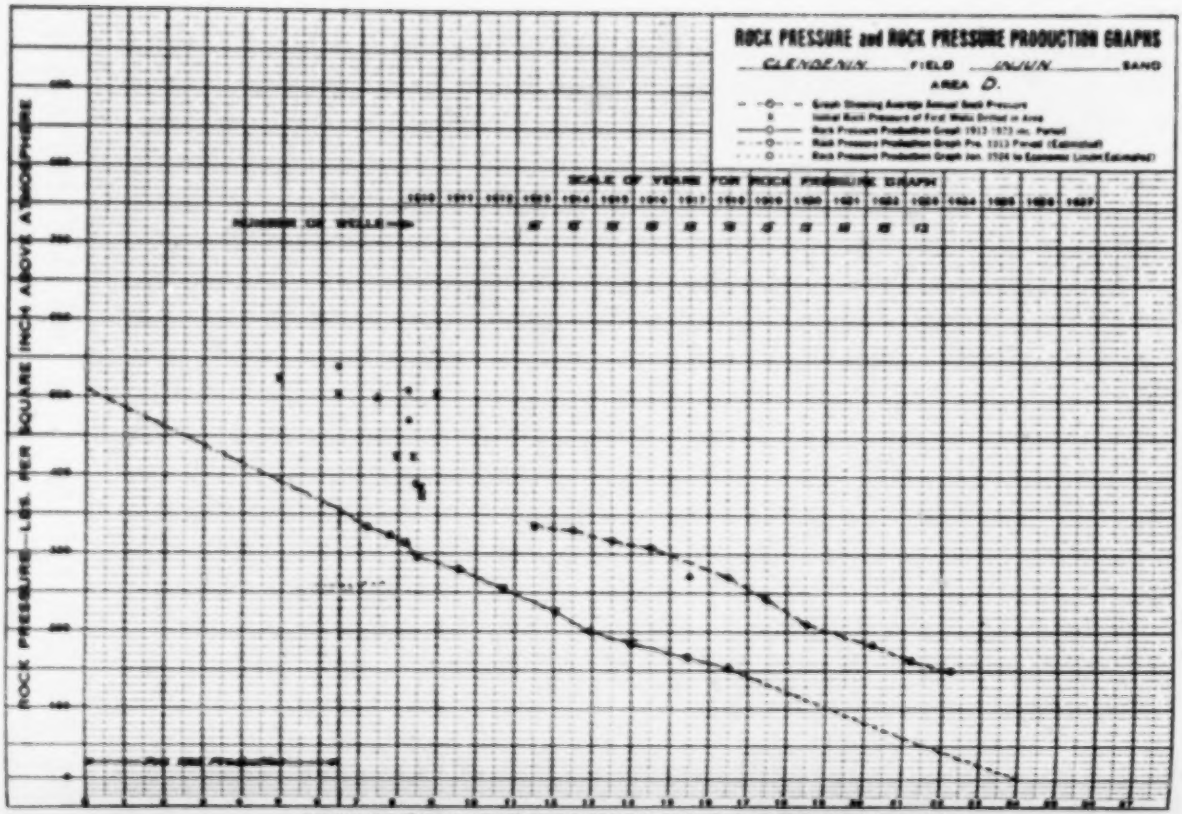

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENDEAN
FIELD
SAUREN
SAND
AREA
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

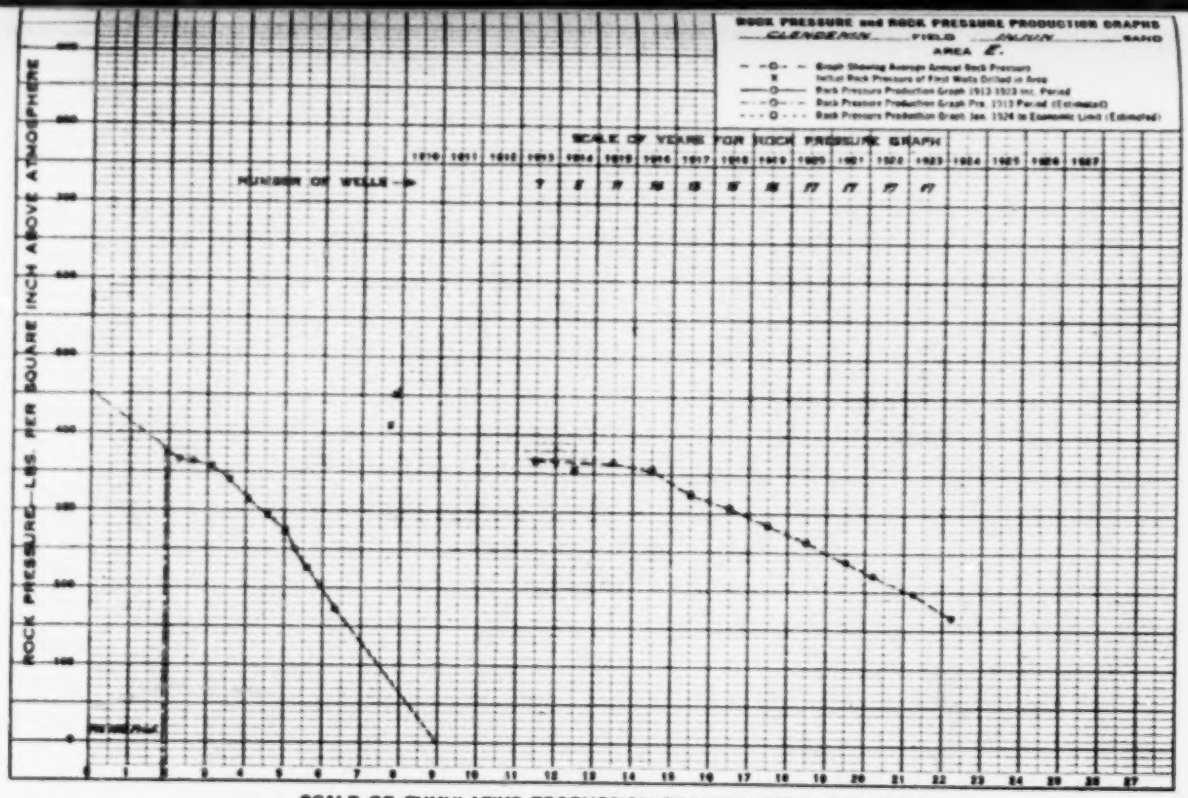

ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

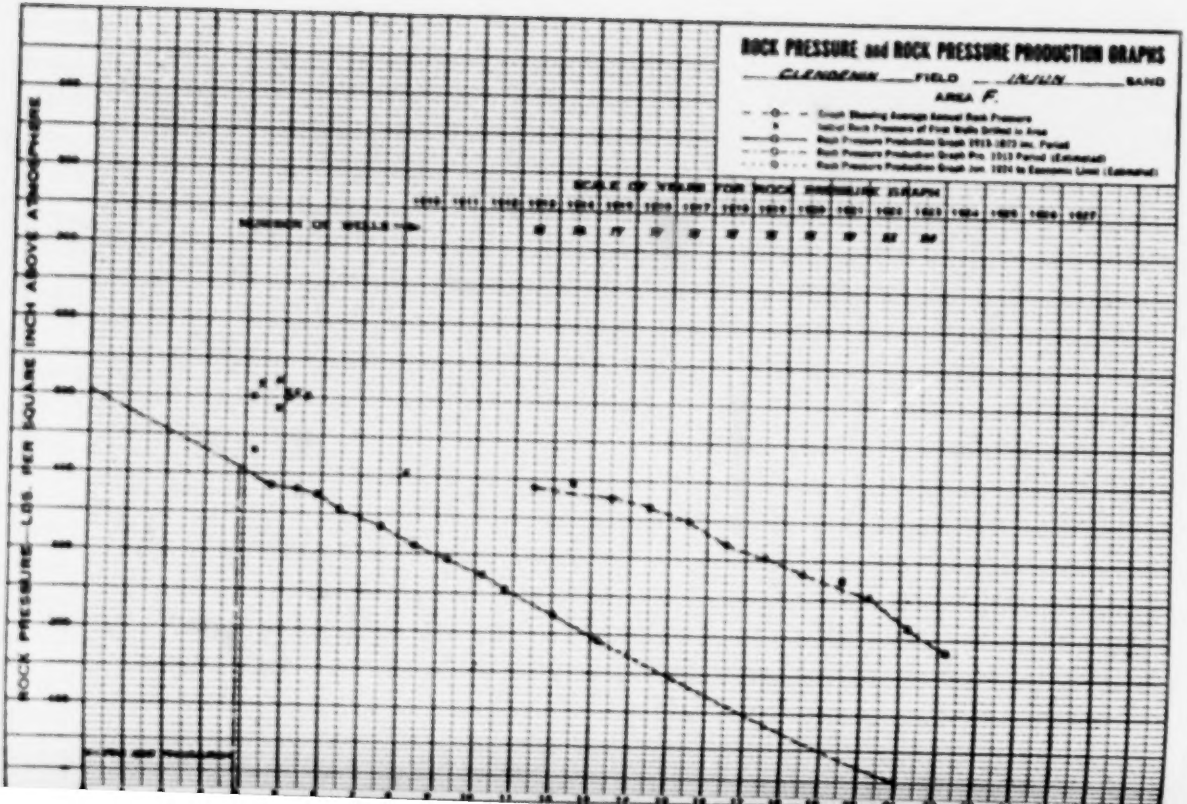

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD INJUN SAND
AREA C.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEVELAND FIELD MUSKINGUM SAND
AREA C.C.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

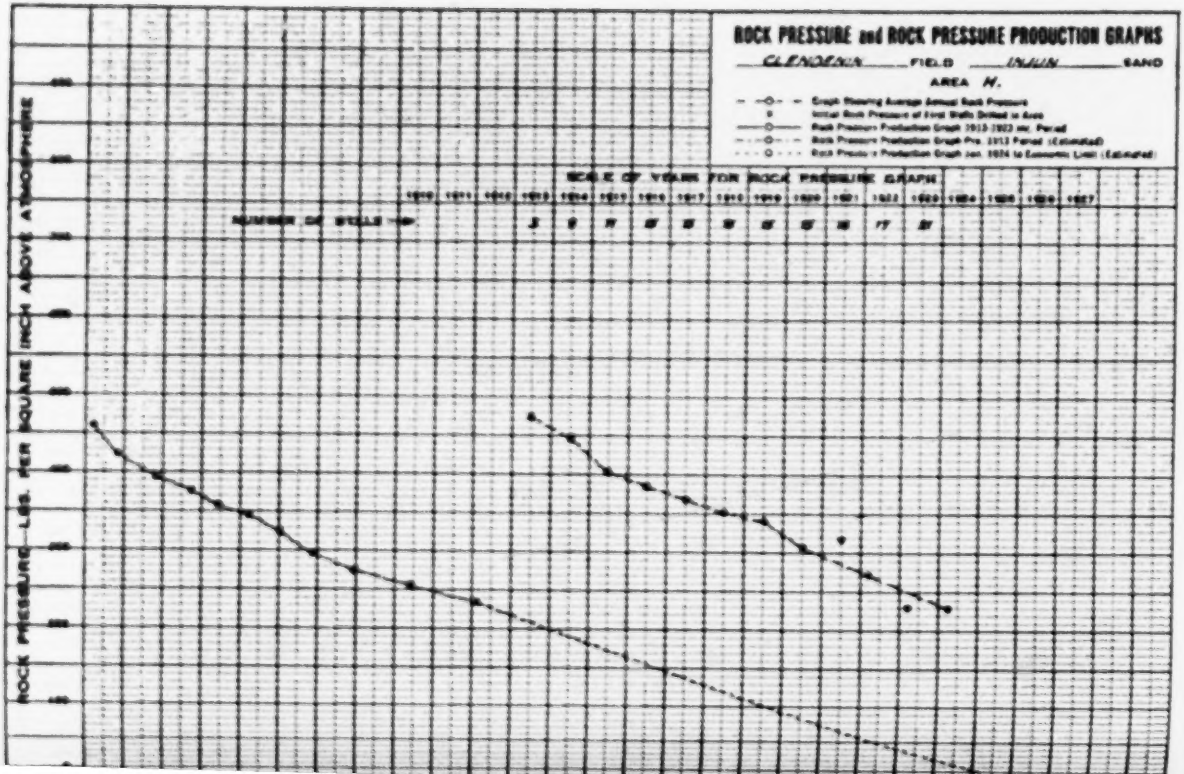
182

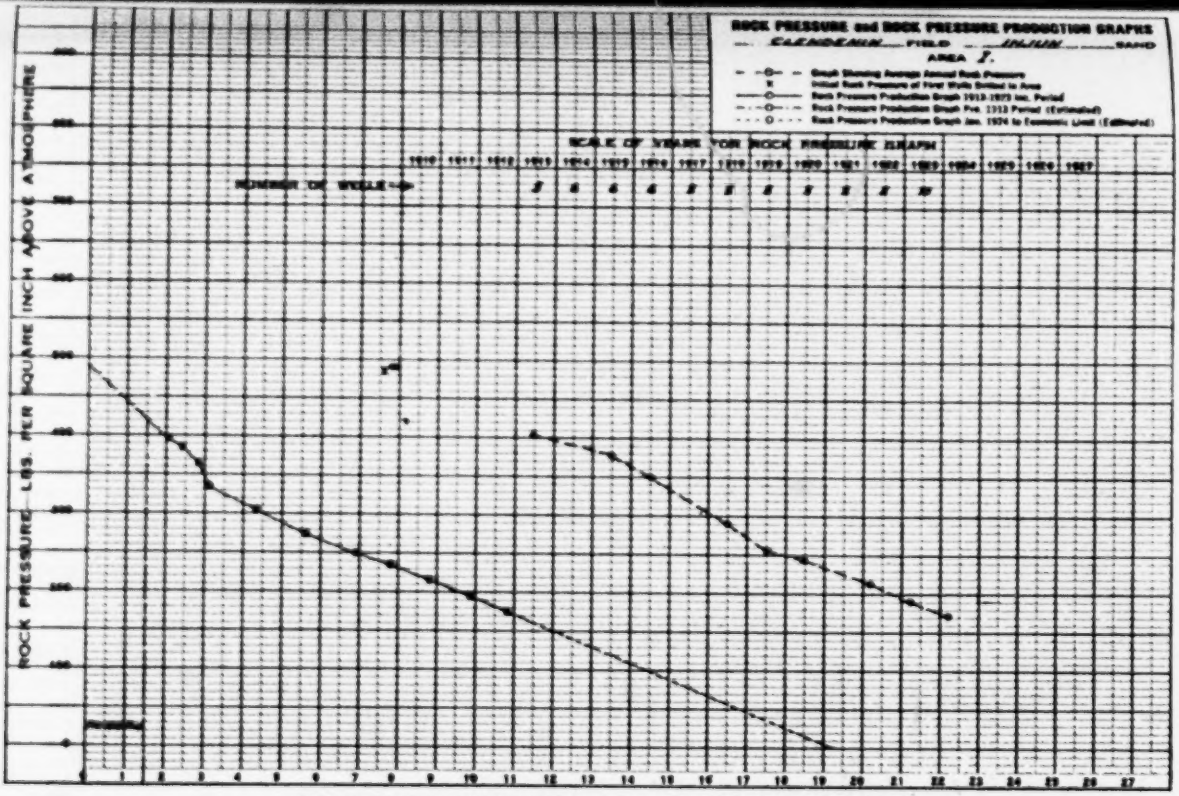

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENDEAN FIELD JOHN SAND
AREA D.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD DUNLAP SAND
AREA E.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 Inc. Period
Rock Pressure Production Graph Pro. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
NUMBER OF WELLS →
7 8 11 16 13 15 16 17 17 17 17
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

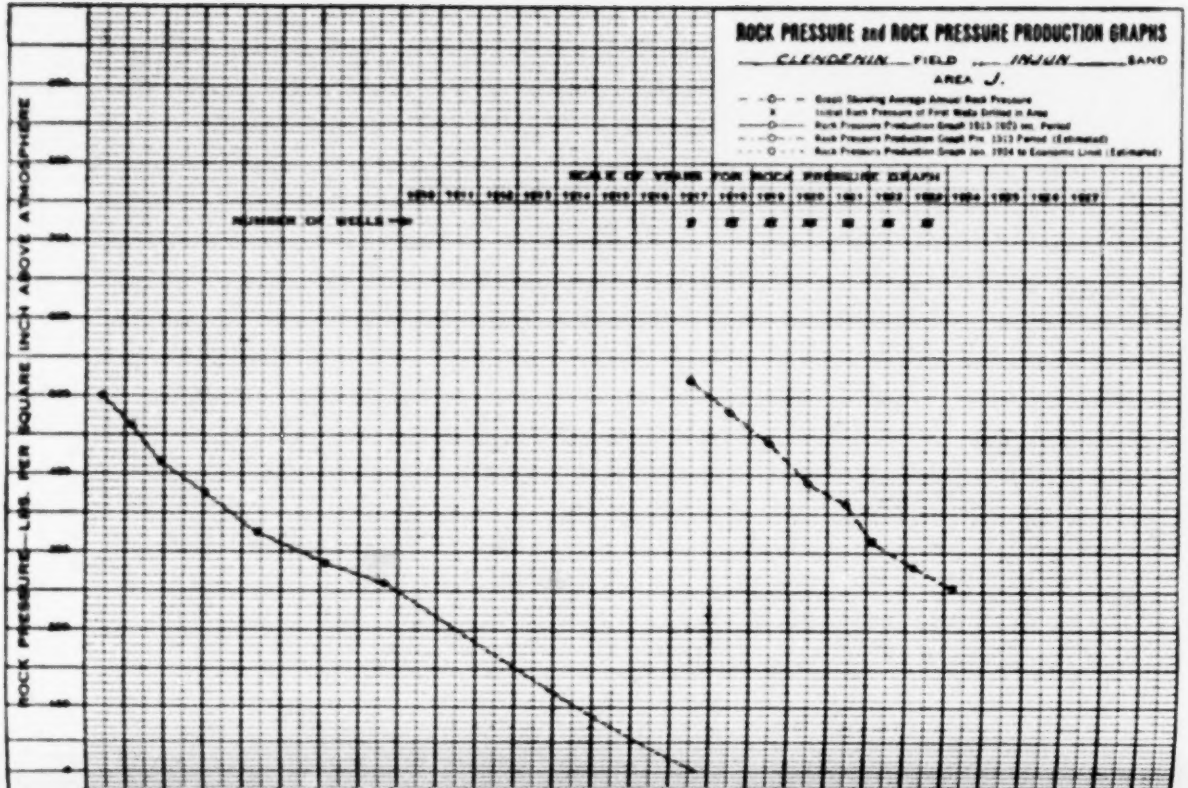

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD UNION SAND
AREA F.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

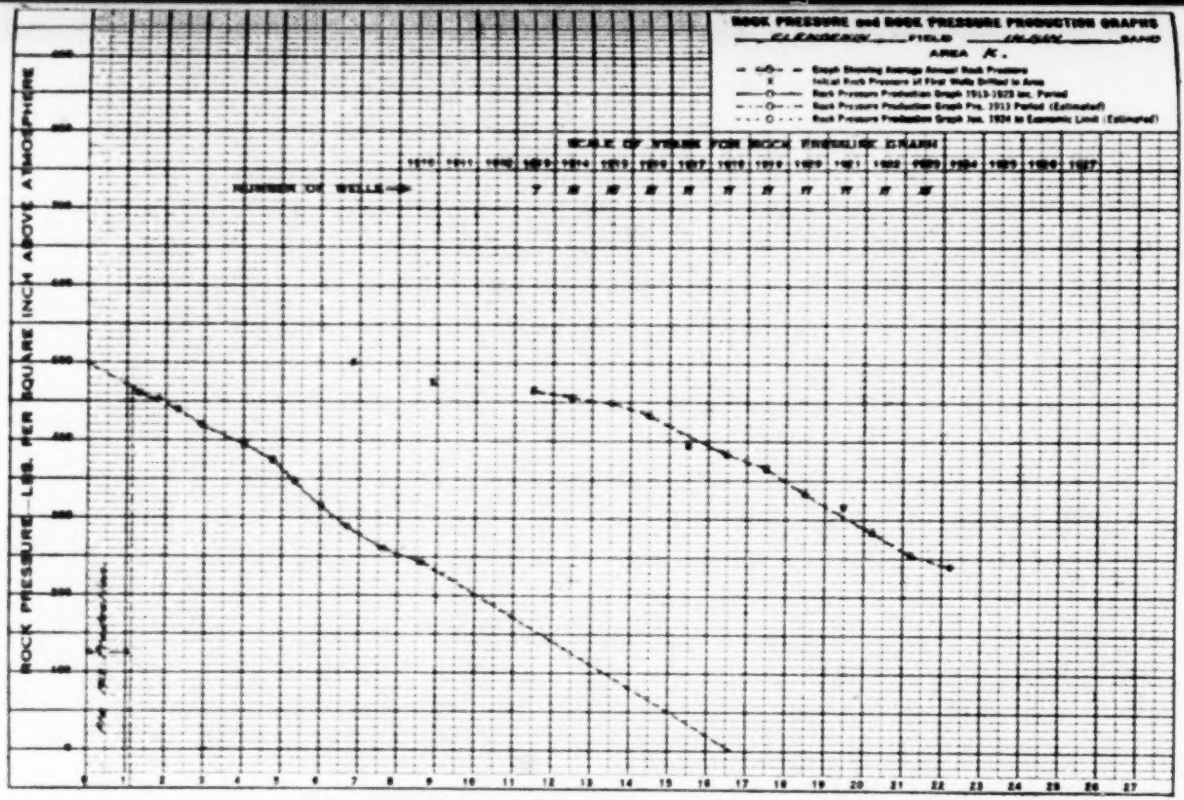
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

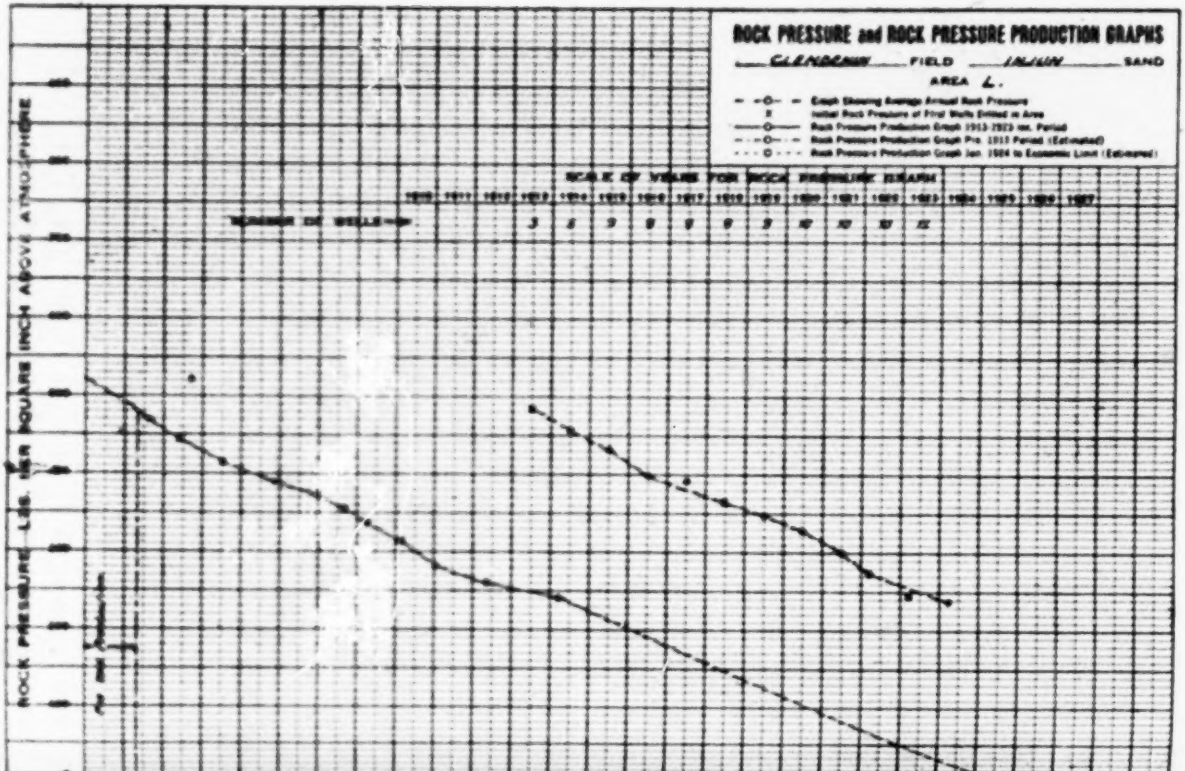

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENROCK FIELD INJUN SAND
AREA N.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE

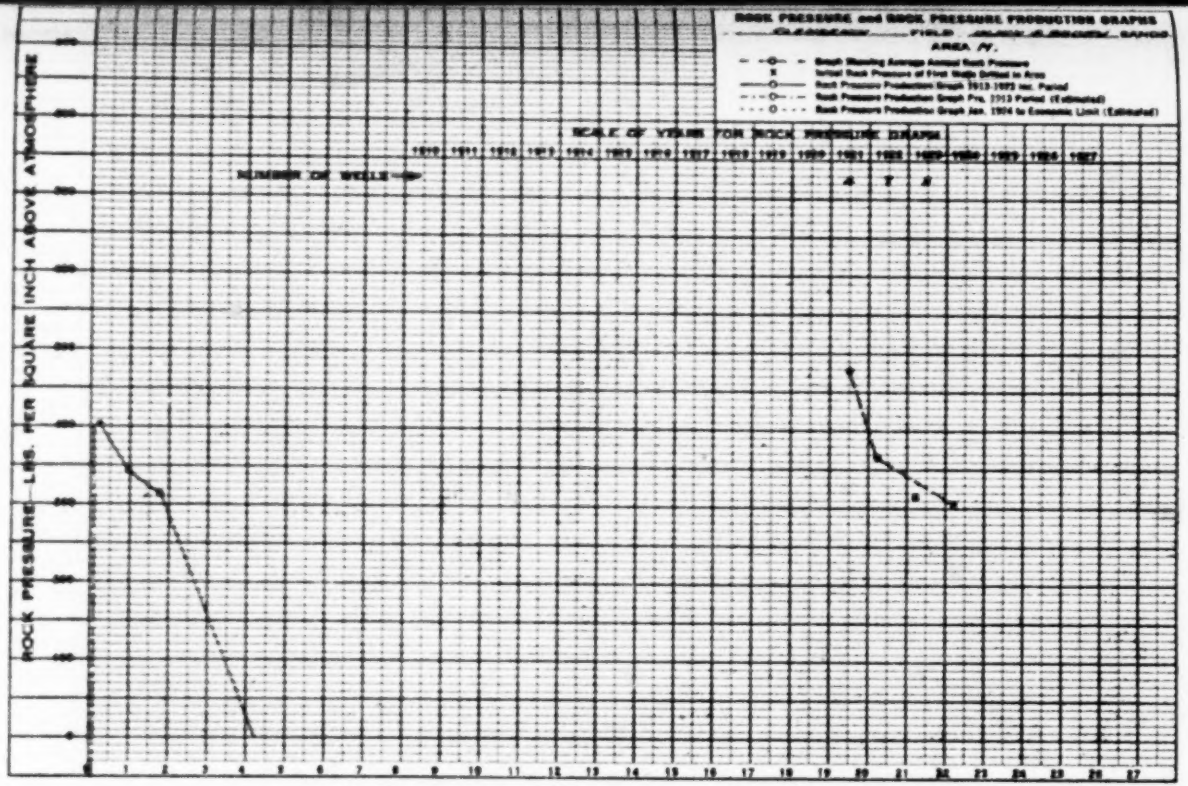

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD JULIUS SAND
AREA I.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph Pre. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

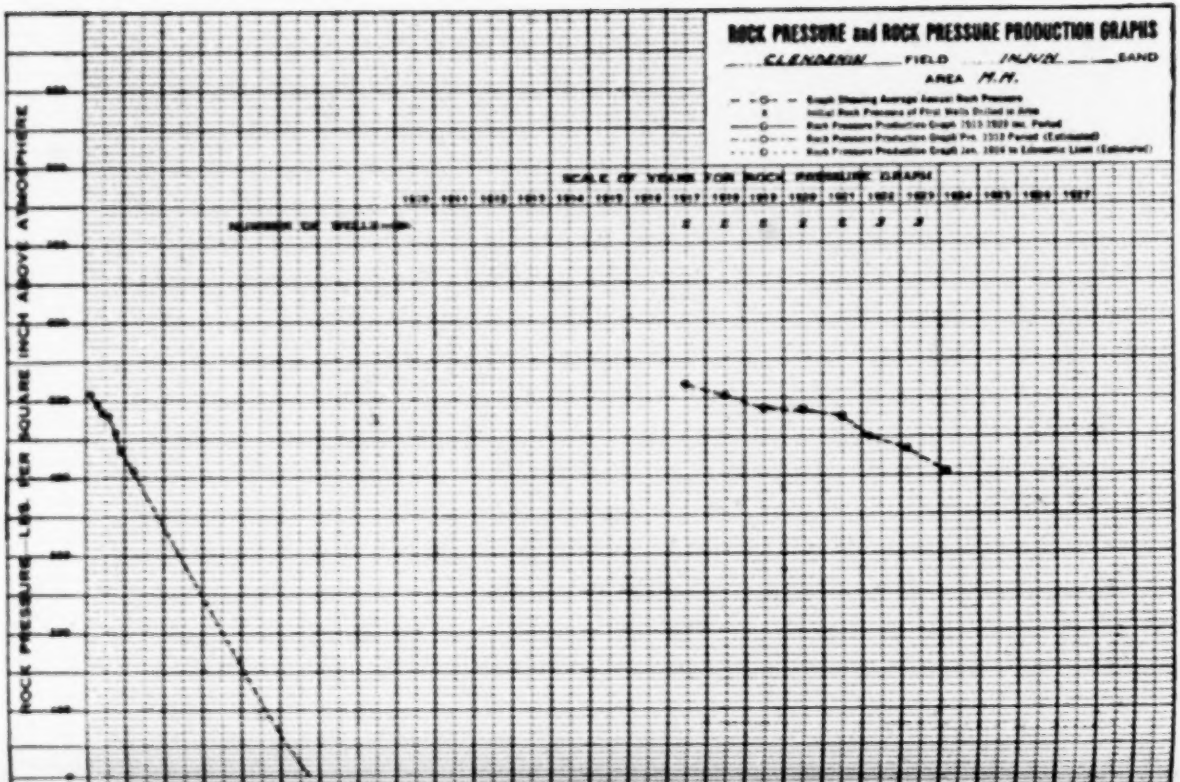
87

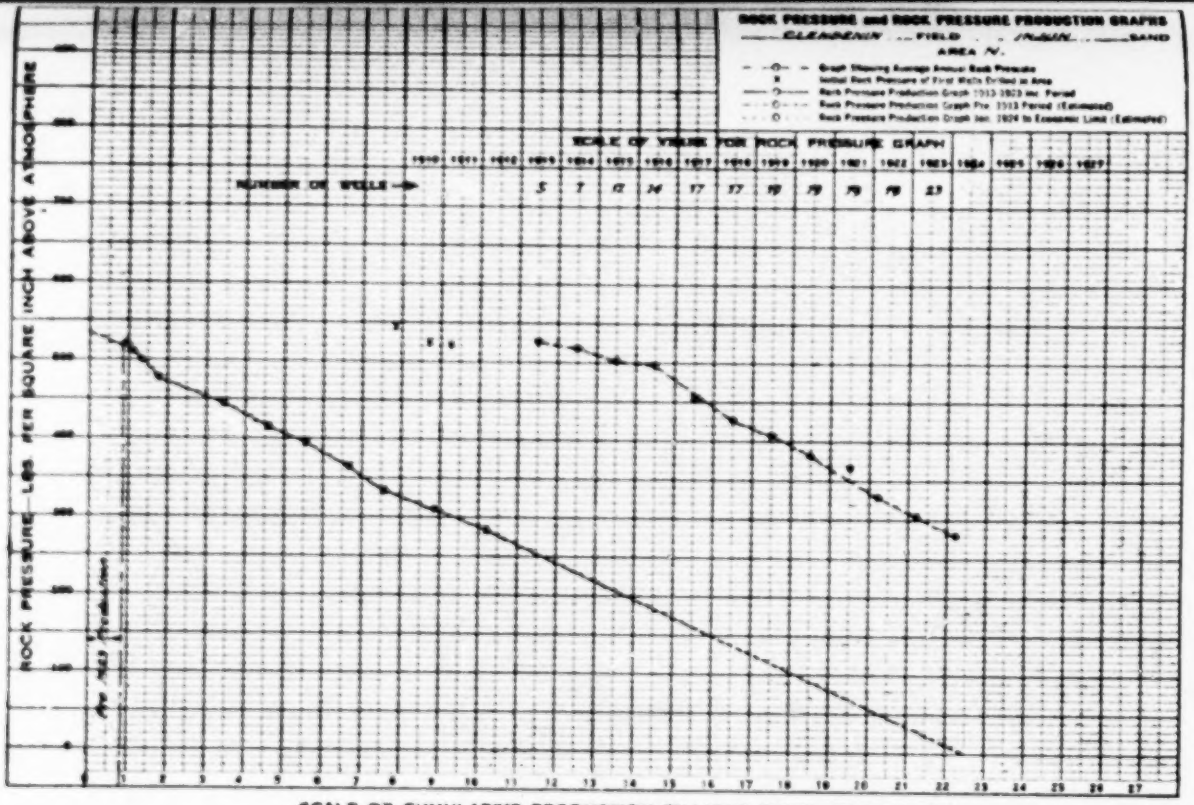

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD INJUN SAND
AREA J.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE

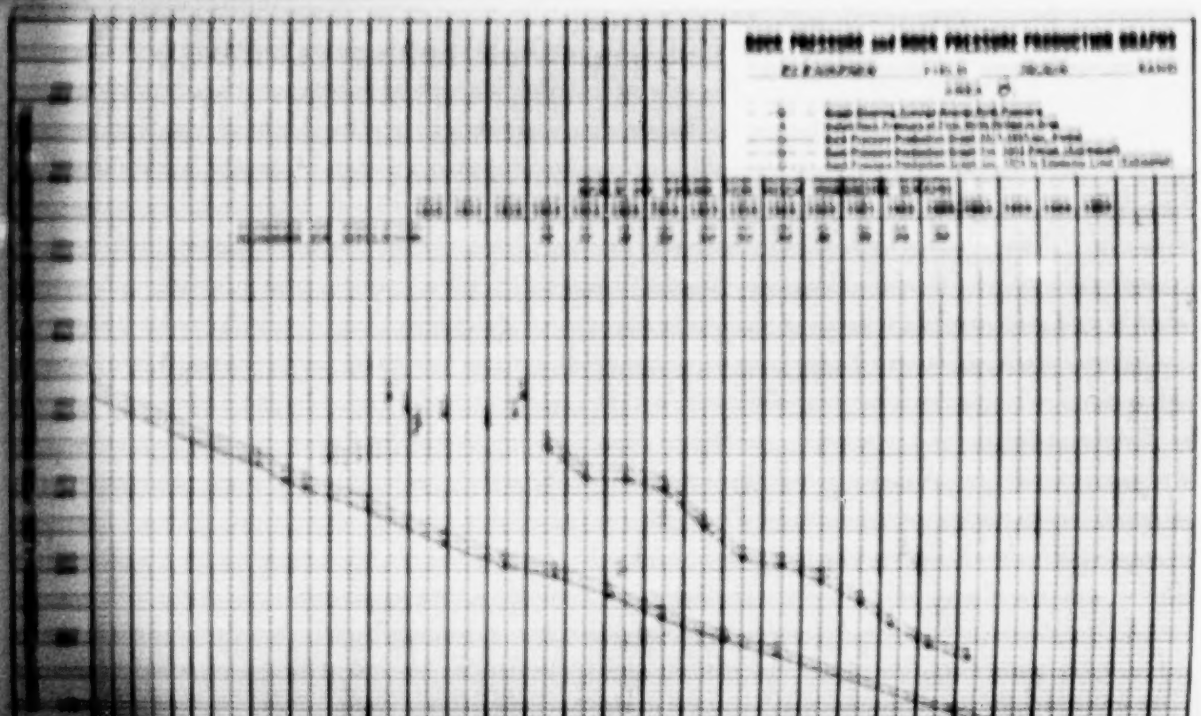

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEARFIELD FIELD CROSBY SAND
AREA A.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 Inc. Period
Rock Pressure Production Graph Pre. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF WEEKS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

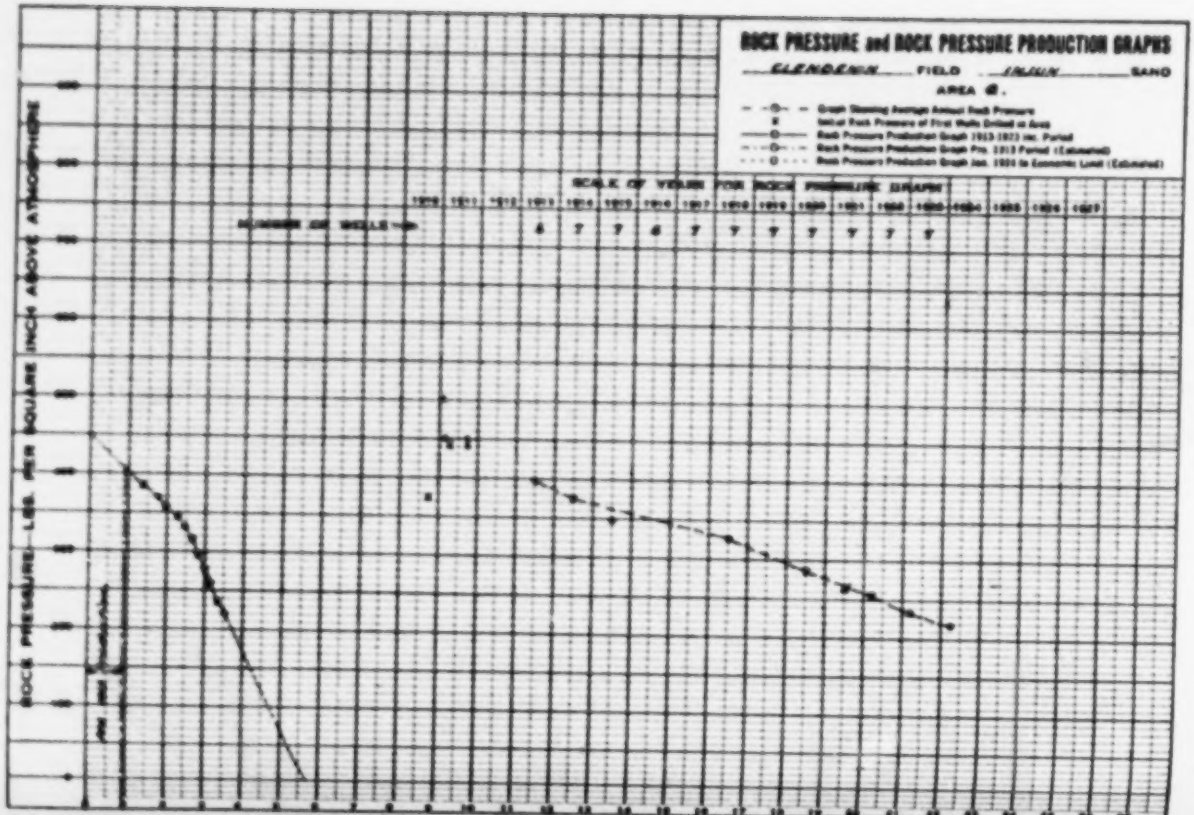

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENDENNING FIELD INLOW SAND
AREA 4.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph Pro. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF VALUES FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

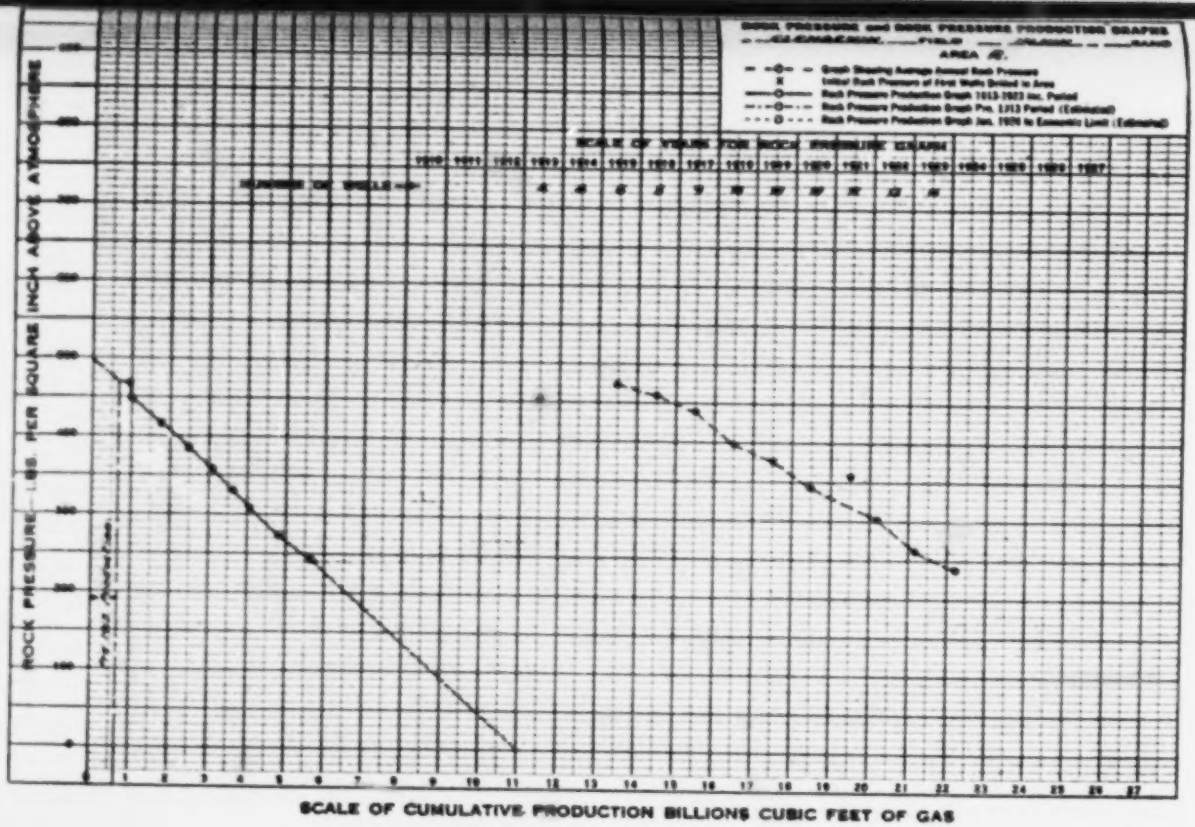

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA IV.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

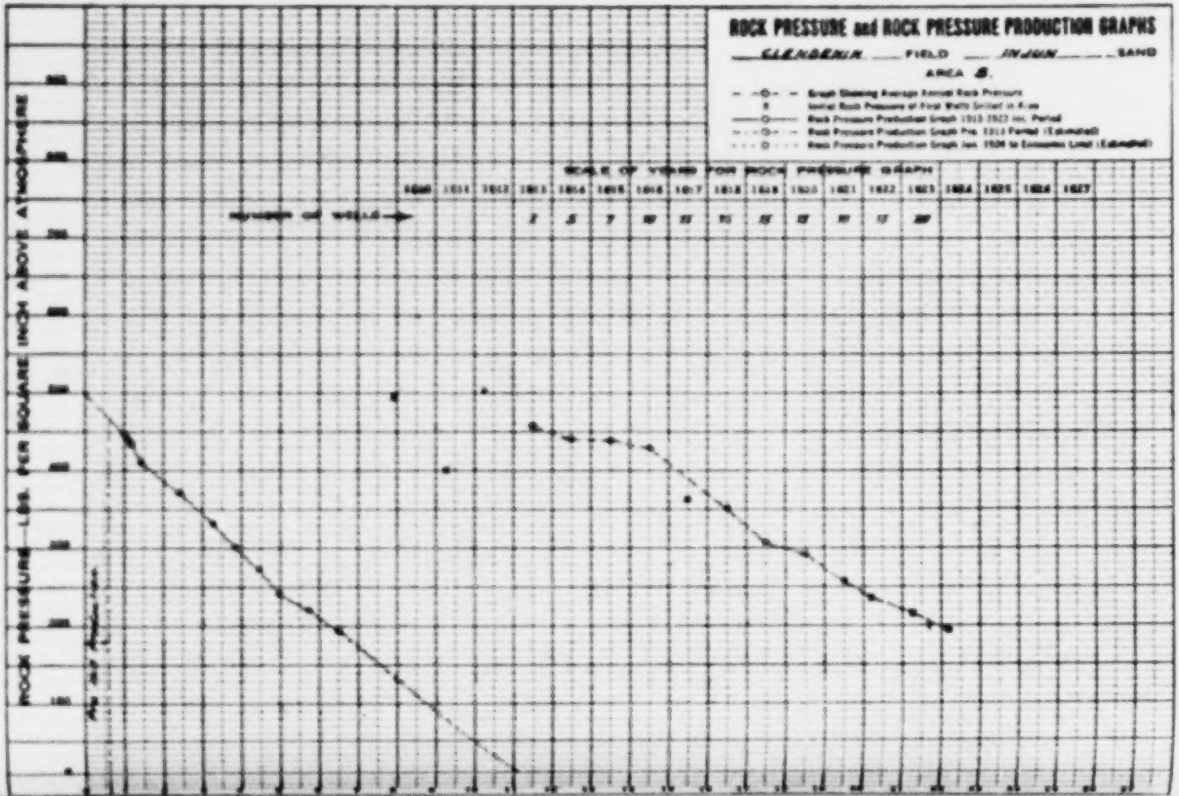

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD INJUN SAND
AREA M.M.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEARFIELD ... FIELD ... RUSH ... SAND
AREA N.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS




ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
FIELD
SAND
AREA @.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE


ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENDEVIL FIELD INJUN SAND
AREA B.
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
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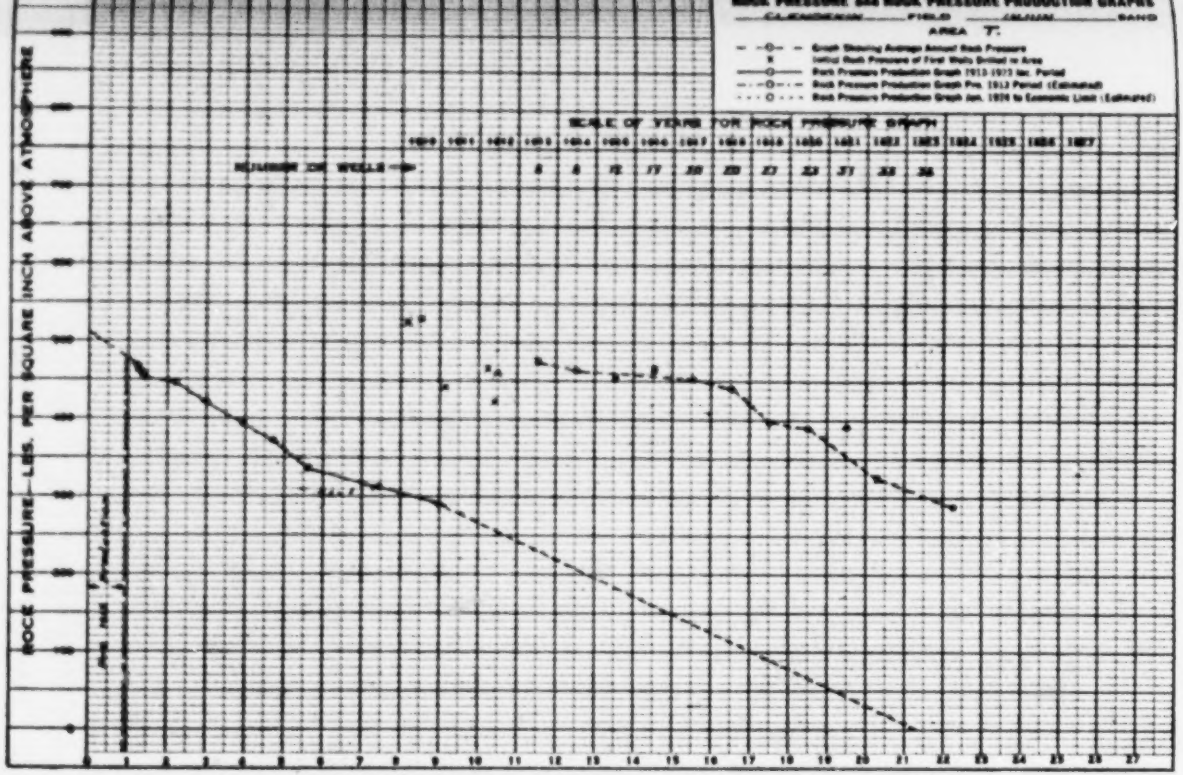
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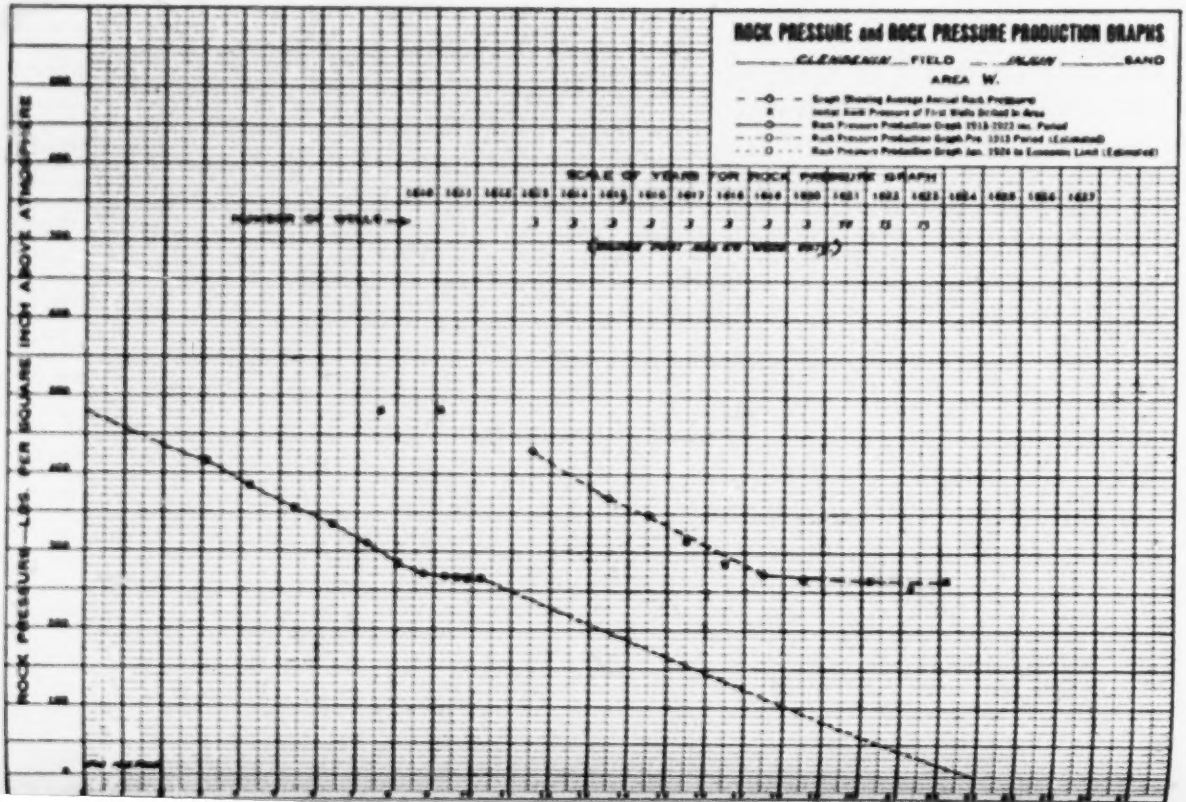
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS
AREA T.


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD PLAIN SAND
AREA W.
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
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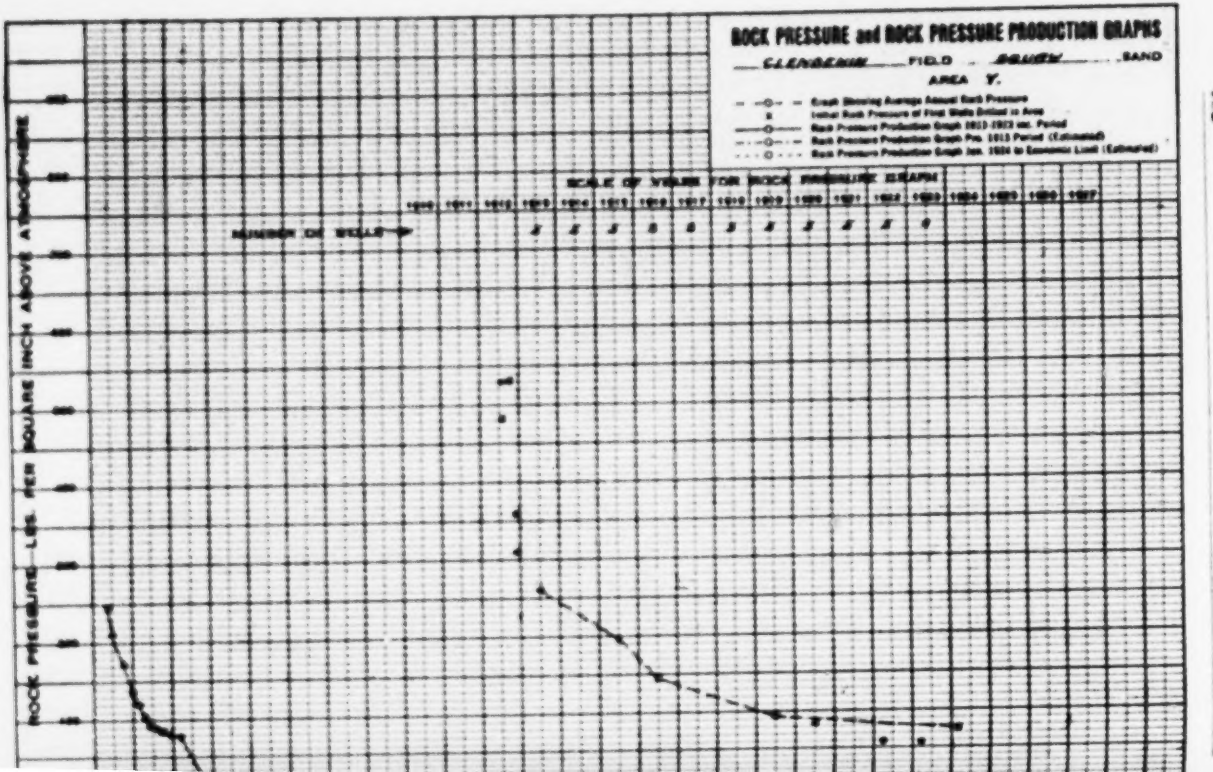
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEARCREEK FIELD SQUISH SAND
AREA Y.
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
NUMBER OF WELLS
SCALE OF VALUES FOR ROCK PRESSURE GRAPH
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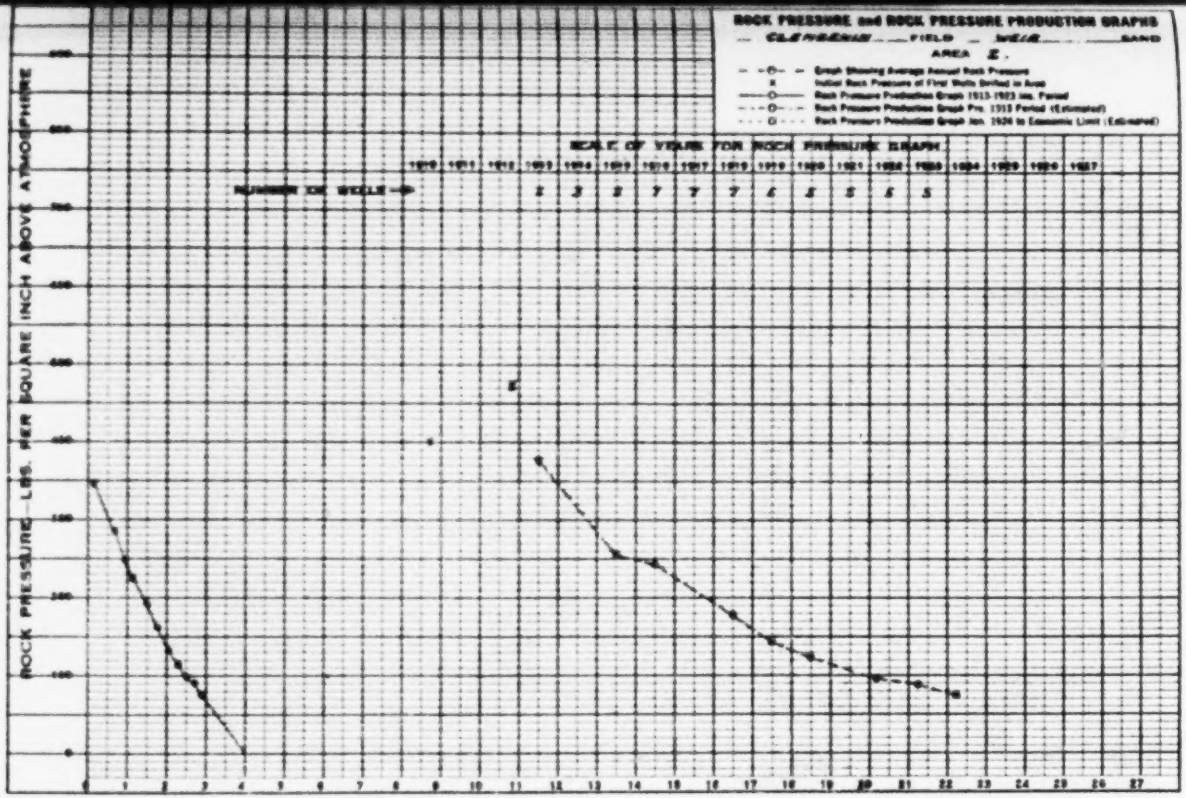
ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEARFIELD FIELD WEIR SAND
AREA E.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph Pro. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
1 3 2 7 7 7 6 5 5 5 5
E
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

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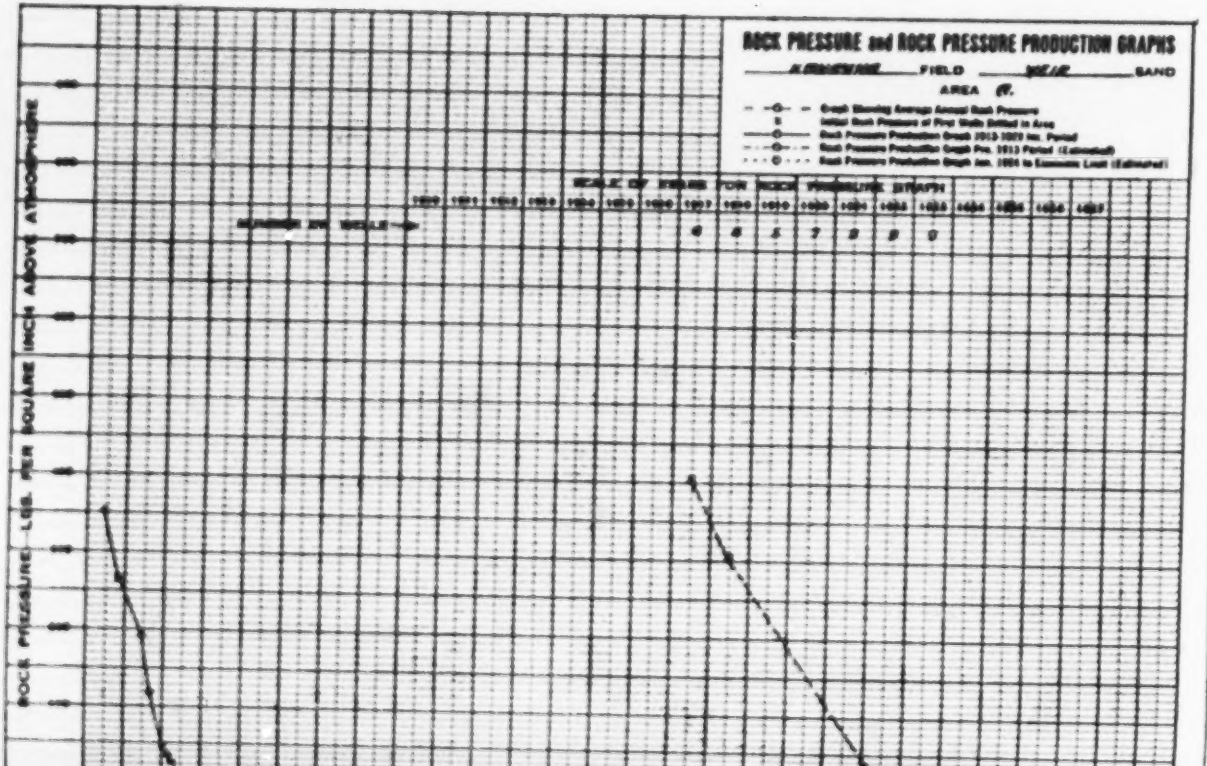
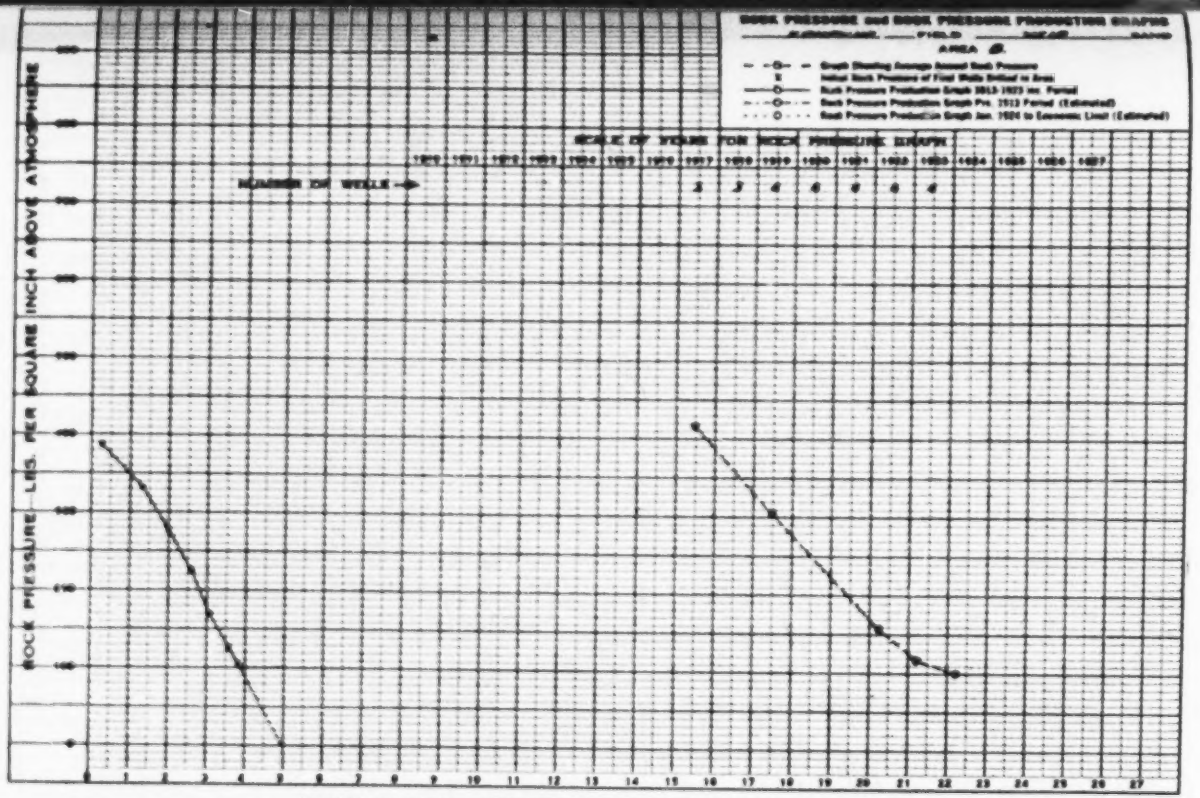
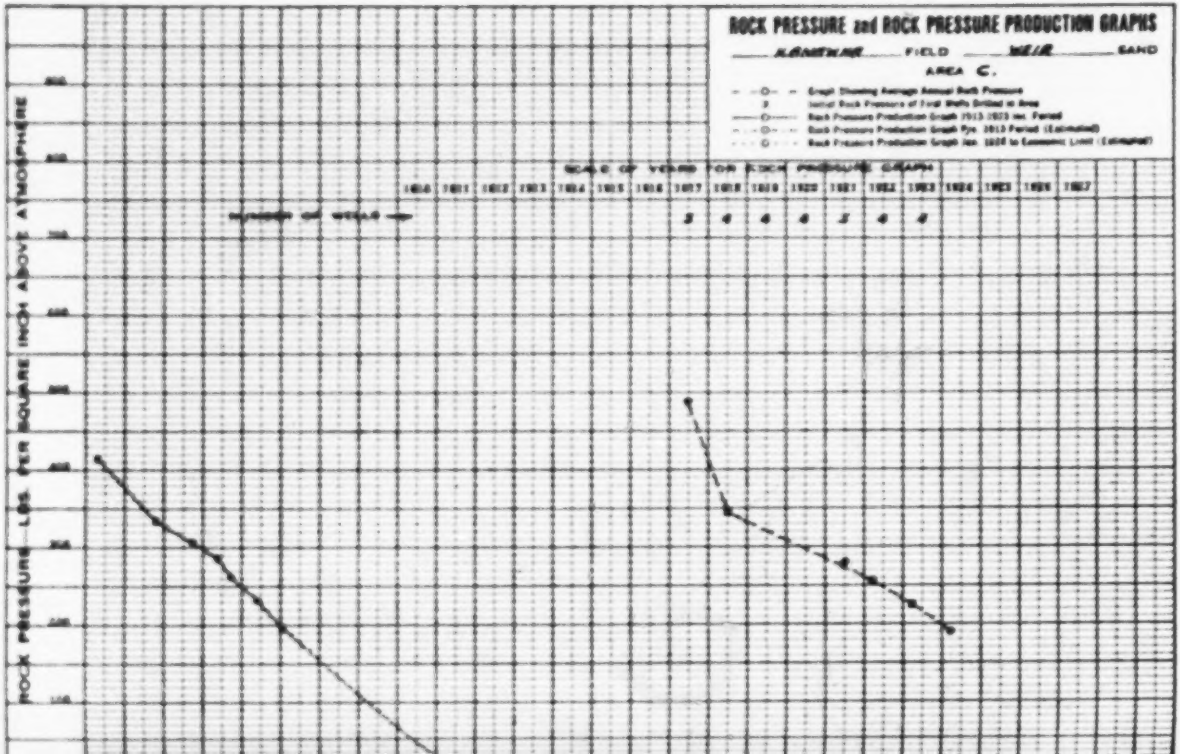
103

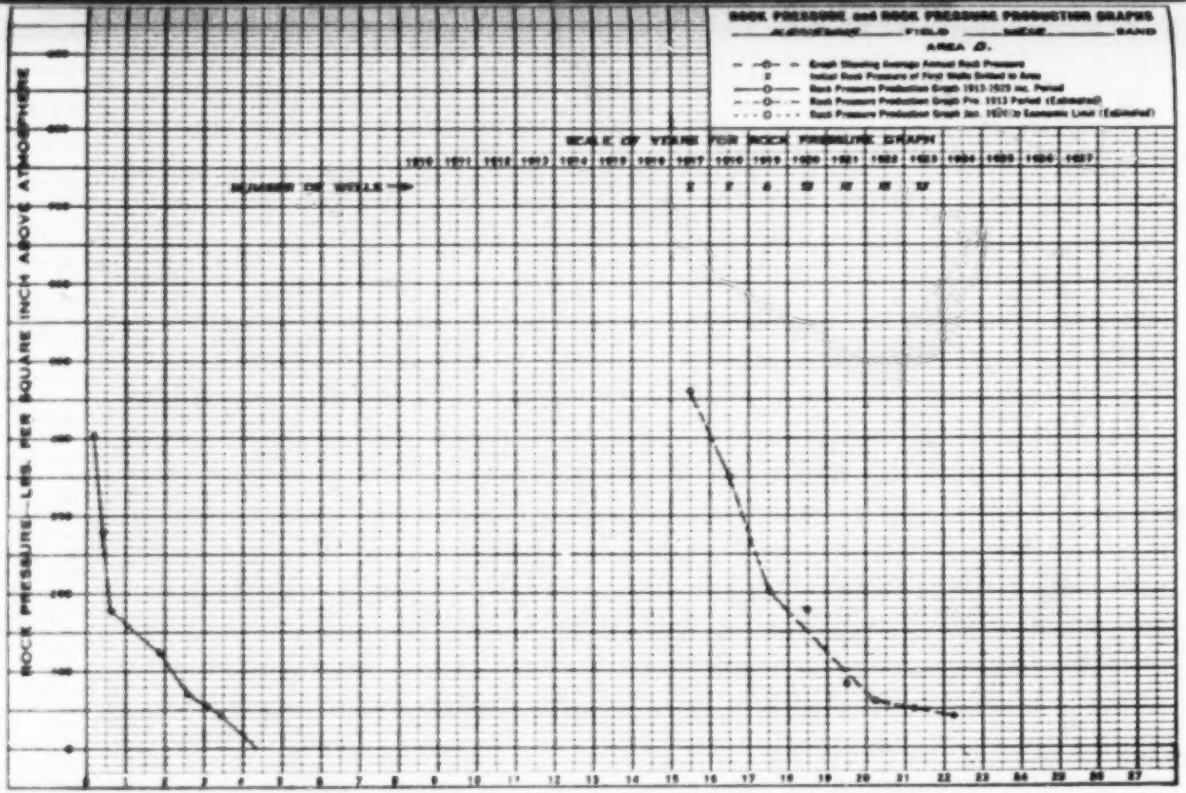

ROCK PRESSURE AND ROCK PRESSURE PRODUCTION GRAPHS
FIELD
SAND
AREA
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

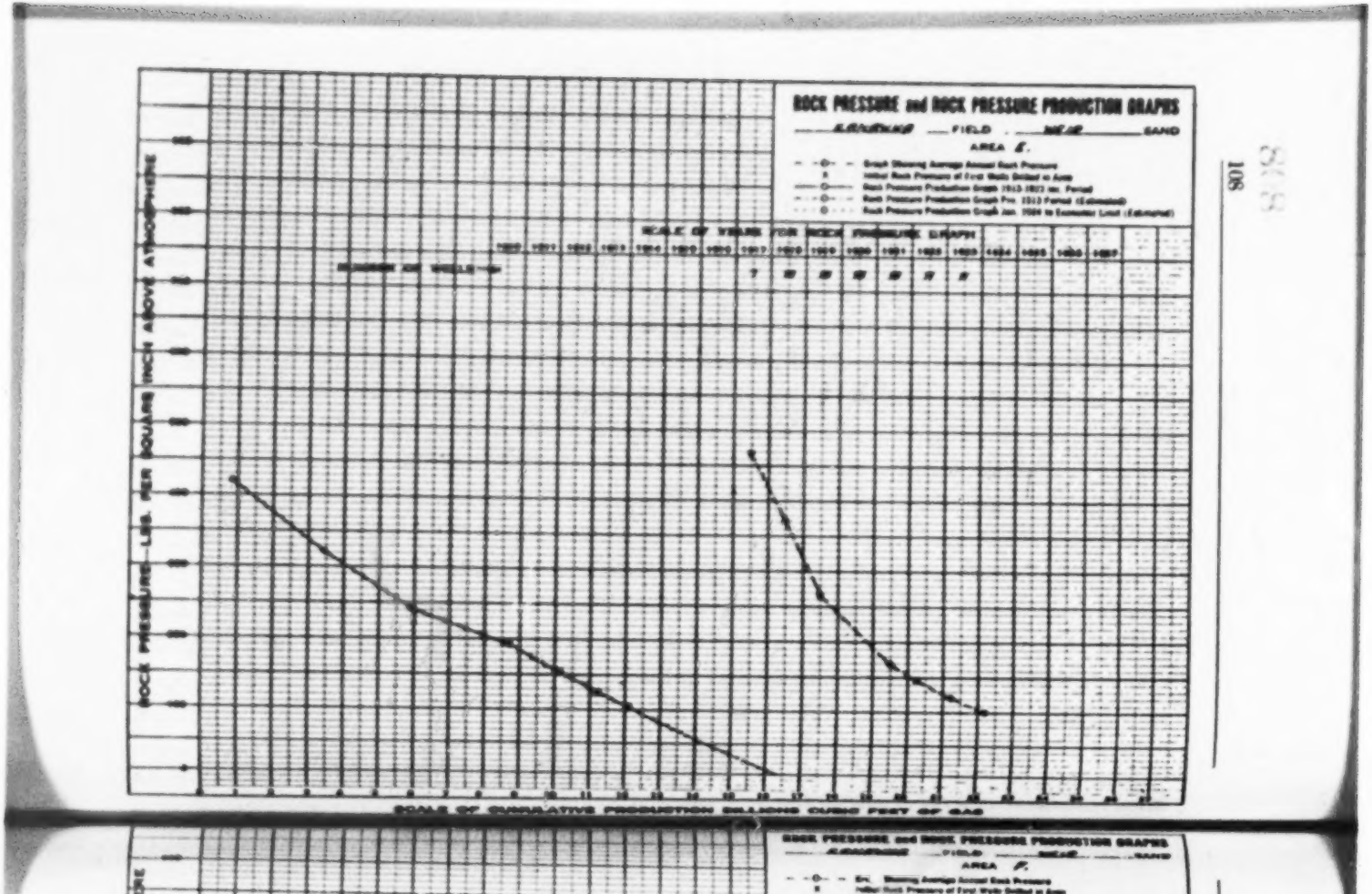
104

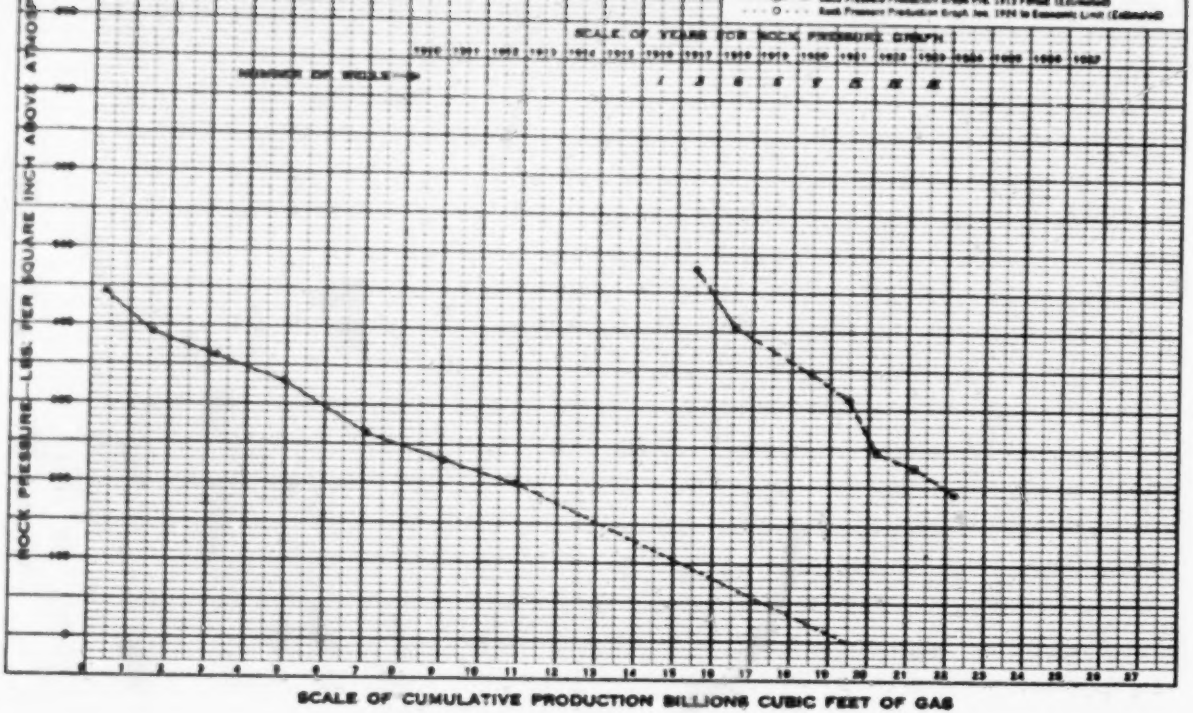

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA B
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
KLONDIKE FIELD WEIR SAND
AREA C.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 Inc. Period
Rock Pressure Production Graph Rpt. 1913 Period (Estimated)
Rock Pressure Production Graph Rpt. 1928 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
Number of Wells
3 4 4 4 3 4 4
ROCK PRESSURE — LBS. PER SQUARE INCH ABOVE ATMOSPHERE
Number of Years

108


ROCK PRESSURE AND ROCK PRESSURE PRODUCTION GRAPHS
AREA D.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA E.
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION GRAPH
ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA F.


ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

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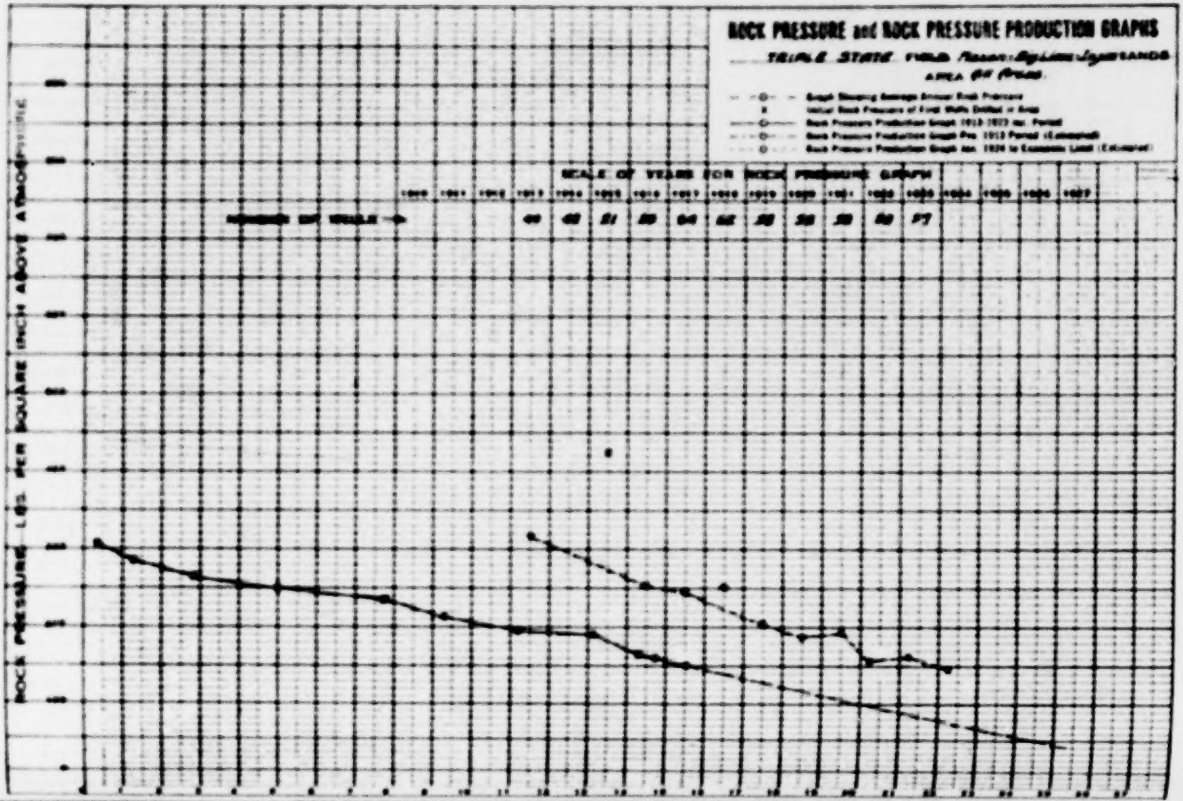
6028


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
TRIPLE STATE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

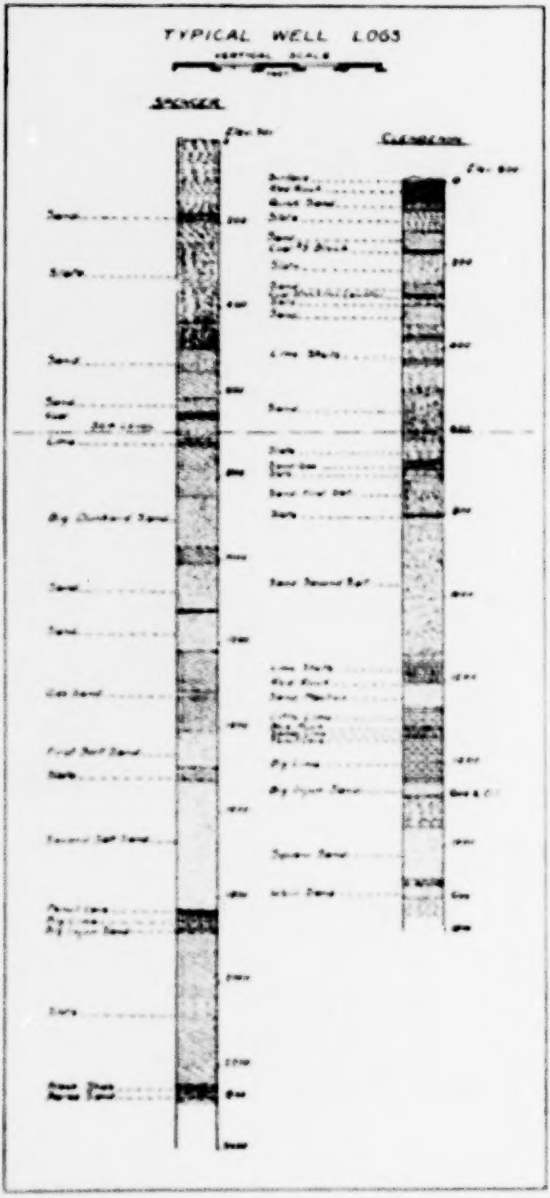
SECTION IV

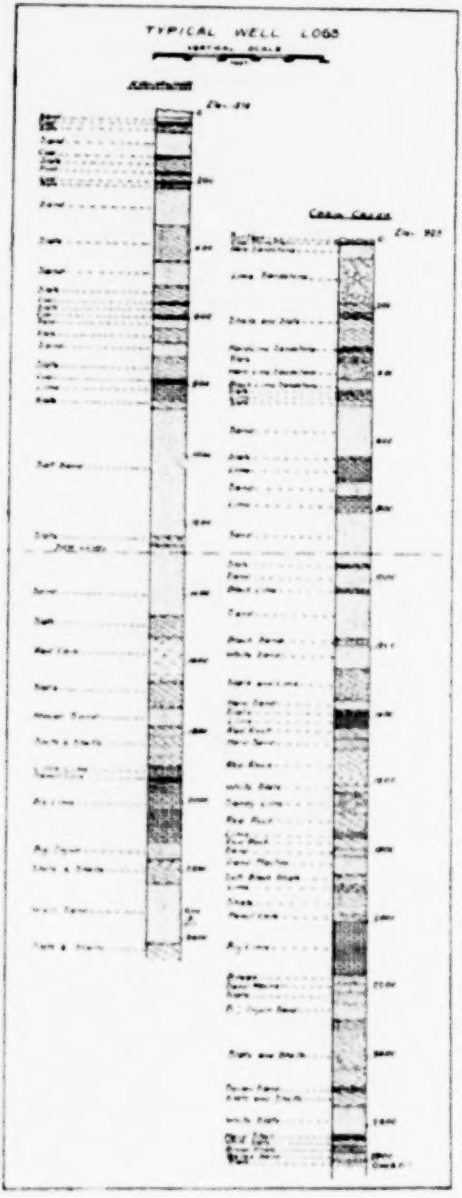
GEOLOGICAL DATA

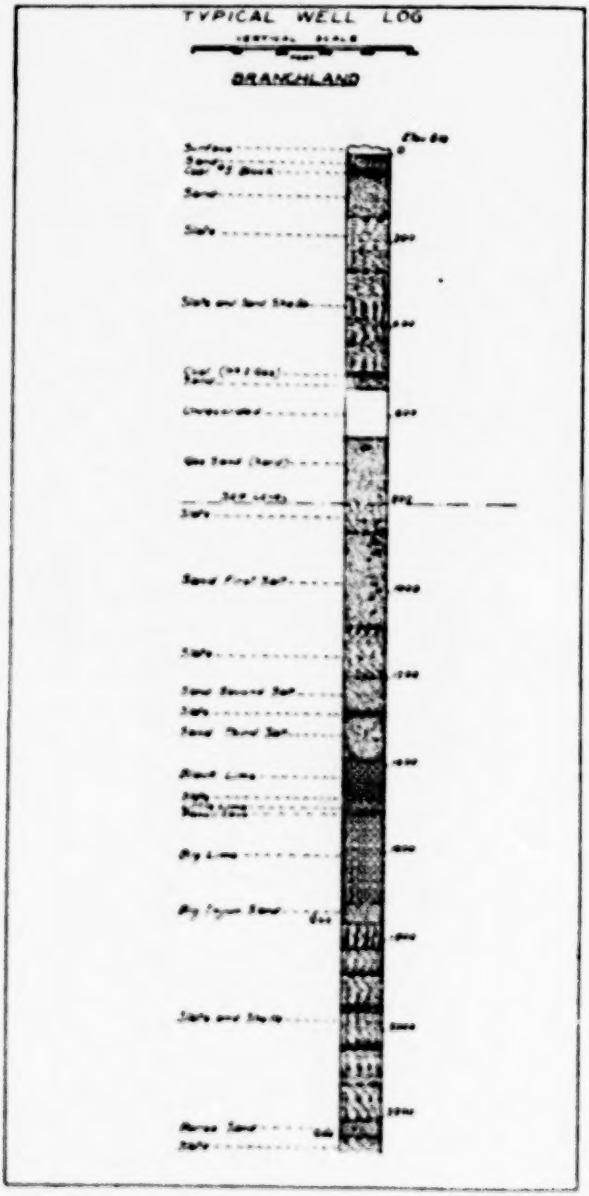
Geological Outline Map

(Showing Pools, Sand Distribution and Structural Areas)

Typical Well Logs.


TYPICAL WELL LOGS


TYPICAL WELL LOGS


TYPICAL WELL LOG
BRANCHLAND

SECTION V

DETAILED DATA

Description of Areas: Probable, Possible and Unfavorable Gas Territory

Table No. 4. Rock Pressure—Production Well Data
(Arranged by Fields)

DESCRIPTION OF AREAS CLASSED AS PROBABLE, POSSIBLE AND UNFAVORABLE

The geologic map shows a division of territory into (a) proven, (b) probable, (c) possible, and (d) unfavorable areas. Each class of territory is further subdivided into unit areas each of which is numbered for the purpose of reference. For example, on sheet number two of the geologic map, the probable areas are shown in blue and are numbered 204, 205, etc. In like manner the possible areas, shown in yellow, are numbered 214, 215, etc.

The following description of each sub-area gives the basis for the classification made, the method of estimating probable gas reserves and recommendations concerning the particular areas described. The acreage held under lease by the company has been determined for each unit area by scaling the farm maps covering the same area and the result is expressed in square mile units.

PROBABLE GAS TERRITORY

MAP SHEET NO. 2

(All company acreage held by the United Fuel Gas Co.)

AREA 204

Farm Maps 9 and 19 — Acreage held 1.1 square miles

About one-half of the area is considered probable for gas production in the Injun and Berea Sands, the other half probable for gas in the Berea Sand only.

Four foreign wells have been completed in this area and are productive from the Injun Sand. The initial open flow of these wells ranged from 20 M to 700 M.

The area is much less attractive than the proven portion of the Spencer Pool for the reason that edge wells of the proven area "L" had small initial open flows.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
5.9	635	1.1	.25	1.0 billion

The above production factor is the average found for the Berea Sand of the Spencer Pool. The rock pressure is the average initial rock pressure found for the adjoining proven area "L." The factor of 25% is applied to properly compensate for the fact that the area appears much less attractive than the productive area with which it is compared.

AREA 205

Farm Map No. 18 Acreage held 1.2 square miles

All of this area is considered probable for gas production in the Berea Sand.

There are no producing wells within this area and there are three dry holes at its edges, toward the northwest, these show that the Berea Sand has either pinched out or tightened.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
5.9	811	1.2	.25	1.4 billion

The above production factor is the average found for the Berea Sand of the Spencer Pool. The rock pressure is the average initial rock pressure of the proven areas "H," "J," and "K."

A factor of 25% is used partly to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve, and partly to measure the probability that the area will prove less productive than the area with which it is compared.

AREA 207

Farm Maps No. 18 and No. 19 **Acreage held 1.7 square miles**

This area is considered probable for oil or gas production from the Injun Sand.

There are two foreign gas wells, five foreign oil wells, one foreign oil and gas well in the Injun Sand and three dry holes.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
9.0	615	1.7	.25	2.4 billion

The above production factor is the average found for the Injun Sand in proven area "M" Spencer Pool. The rock pressure is the average initial rock pressure of proven area "M."

A factor of 25% is used partly to compensate for the difference in rock pressure that will be found in the area when it is developed and that used in estimating its reserve, and partly to measure the possibility that wells drilled will be small oil wells or dry holes.

AREA 208

Farm Maps No. 17, No. 18, No. 27, No. 28

Acreage held 9.5 square miles

This area is classed as probable for gas in the Salt Sand, also to a lesser degree for the Berea Sand.

Some of this area has been tested and gas production from the Salt Sand has been obtained.

There are three gas wells and five oil wells producing from the Salt Sand. The initial open flows of the gas wells ranged from 500 M to 3,500 M. Within the area there is one abandoned gas well, one abandoned oil well and six dry holes.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
5.2	610	9.5	.25	7.5 billion

(This includes the reserves of wells No. 993 and 319)

The above production factor of 5.2 million feet is that of the Salt Sand in the Spencer Pool. The rock pressure is the average initial rock pressure of proven area "C-C."

A factor of 25% is used partly to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve; and partly to measure the probability that a considerable portion of the area will prove unproductive.

The drilling of this area can be carried on from the outer edges of the proven areas.

AREA 209

Farm Map No. 29 Acreage held 0.2 square miles

This acreage lies between dry hole No. 346 and a small gas well ¾ mile southeast. Wells No. 282 and No. 296 are small wells. Five foreign wells have been drilled within the area. It is probable that a small well would result from drilling.

Drilling is not recommended and no reserves are included for the area.

AREA 210

Farm Maps No. 28, No. 37, and No. 38

Acreage held 1.4 square miles

This acreage is considered probable for gas production in the Injun Sand.

There are fourteen foreign wells producing from the Injun, Lime or Salt Sands. The initial daily open flow of these wells ranged from 200 M to 1,200 M. Four small oil wells are also producing.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Million Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	505	1.4	.25	1.3 billion

The above production factor of 7.1 million feet is the average found for the Injun Sand in the Clendenin Pool. The rock pressure is the average initial rock pressure of proven areas "C" and "D." A factor of 25% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

AREA 211

Farm Maps No. 37 and No. 38. Acreage held 5.7 square miles

This area is considered probable for gas production from the Injun Sand. The majority of the edge wells of the proven areas "B," "C," and "C-C" have high initial open flows; however the outer edge of the area is well defined by dry holes. Within the area there is one producing oil and gas well and one abandoned oil well.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	507	5.7	.75	15.4 billion

The above production factor of 7.1 million feet is the average production factor of the Injun Sand in the Clendenin Pool.

The rock pressure is the average initial rock pressure of the proven areas "B," "C," and "C-C."

A factor of 75% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

Drilling can best be carried on by working outward from the proven areas.

AREA 212

Farm Map No. 38 Acreage held 5.5 square miles

This area is considered probable for oil production as there are already eleven small oil wells and but one dry hole.

The company holds the gas rights in this acreage but the oil rights on only 2.2 square miles.

No gas reserve has been included for this area.

AREA 213

Farm Maps No. 29 and No. 39 Acreage held 17.3 square miles

All of this area is considered probable for gas production in the Injun Sand. The edge wells of the adjacent proven areas have on the average been large producers.

A very small portion of this area has been drilled.

There are five foreign gas wells and one company gas well producing from the Injun Sand.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	510	17.3	.65	40.7 billion

(This includes reserve of well No. 402)

The above production factor of 7.1 million feet is the average production factor of the Injun Sand in the Clendenin Pool. The rock pressure is the average initial rock pressure of the adjoining proven areas.

A factor of 65% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

Drilling of this area can be best carried on by working outward from the edges of the proven areas.

MAP SHEET NO. 3

AREA 304

Farm Map No. 47 — Acreage held 1.5 square miles

This area is classed as probable for gas in the Injun Sand.

The southwestern portion of this area has been drilled and is productive of gas from the Injun Sand. Structurally the area is near the crest of a plunging anticline and is practically surrounded by a dry area.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	500	1.5	.75	4.0 billion

(Includes reserves of wells No. 345, No. 286 and No. 646)

The above production factor of 7.1 million feet is the average found for the Injun Sand in the Clendenin Pool. The rock pressure used, 500 lbs., is the initial rock pressure of the area. A factor of 75% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

AREA 307

Farm Maps No. 38, No. 48 and No. 49

Acreage held 22 square miles

All of this area is considered probable for gas in the Injun Sand and in some parts in the Weir Sand.

For the most part, this acreage is surrounded by proven areas. The area to the southeast, however, is considered dry although successful results have attended drilling in the southeast part of area No. 307.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	485	22.0	.75	56.8 billion

(This includes reserves of wells No. 461, No. 404, No. 662, No. 900, No. 494, No. 609, No. 644, No. 1010, No. 1276, No. 1293, No. 1332, No. 1337 and No. 1350.)

The above production factor of 7.1 million feet is the average found for the Injun Sand in the Clendenin Pool. The rock pressure used, 485 lbs. is the average initial rock pressure of the area.

A factor of 75% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

AREA 316

Farm Maps No. 47 and No. 48 Acreage held 12.7 square miles

This area, situated on the flank of the Warfield Anticline, is considered probable for gas production in the Injun, Squaw and Weir Sands but the Injun is by far the most important. It is on the edge of an oil pool and has one proven area of gas near its center and another at one end.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	462	12.7	.75	31.2 billion

(This includes reserves of wells No. 777, No. 778, No. 661 and No. 752)

The above production factor of 7.1 million feet is the production factor found for the Injun Sand in the Clendenin Field.

The rock pressure used, 462 lbs., is the average initial rock pressure of wells drilled in the area and of neighboring wells.

Since wells drilled in the area have proven smaller than those in the adjoining proven area, a factor of 75% has been used.

AREA 322

Farm Maps No. 47, No. 48 and No. 57

Acreage held 8.1 square miles

This area, situated near the apex of the Warfield Anticline, is considered probable for gas production from the Big Lime, Keener and Injun Sands. The Company has drilled four wells within the area and these as well as foreign wells are productive from these three sands.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	340	8.1	75	14.7 billion

(This includes the reserves of wells No. 554, No. 1099, No. 1117 and No. 1314)

As there is no company proven area near, it is found necessary to use the average production factor for the Injun Sand in the Clendenin Pool. The rock pressure used, 340 lbs., is the average initial rock pressure of the area.

A factor of 75% has been used partly to compensate for the depletion of this area by foreign wells.

AREA 325

Farm Maps No. 57 and No. 58

Acreage held by Cabin Creek Gas Co.—2.4 sq. mi.
Acreage held by United Fuel Gas Co.—22.2 sq. mi.

This area, located on the east flank of the Warfield Anticline is considered probable for gas production from the Weir Sand, which is thick in this area.

This area completely surrounds the large proven area No. 326, and only a small portion of area No. 325 is bounded by dry territory.

A few wells have been drilled within the area and are productive.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet		Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
U. F. G.	19.0	400	22.2	.50	84.4 billion
Cabin Creek	19.0	400	2.4	.25	4.6 billion

(This includes reserves of wells No. 1137, 1090, 1091, 907, 1116, 1018, 974, 1277, 1298 and CC 46)

The above production factor is the factor obtained for the Weir Sand in the proven areas of this locality. The rock pressure used, 400 lbs., is the approximate average initial rock pressure of this area.

Since the Weir Sand becomes thinner at the outer boundaries, and the fact that the area surrounds closely drilled acreage, a 50% factor has been used for the United Fuel Gas Co. acreage. Due to the fact that one dry hole has been drilled close to the Cabin Creek Gas Company acreage a factor of 25% has been used.

In certain sections of this area drilling should be undertaken promptly, as the foreign wells now producing will rapidly deplete the reserve of those portions.

AREA 330

Farm Maps No. 57 and No. 67 Acreage held 5.4 square miles

This area, situated on the crest of the Warfield Anticline, is fairly well tested and is considered probable for gas production in the Big Lime. The life of such wells will be short however. No production of consequence from other sands is likely.

Several foreign wells are productive within the area. There is a dry area to the northeast and northwest.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.0	330	5.4	.75	4.0 billion

The above production factor of 3.0 is based on a comparison between the Injun production with that of the Big Lime. The average initial rock pressure is about 330 lbs.

A factor of 75% has been used to compensate for the difference in rock pressure that will be found when it is developed and that used in estimating its reserve.

AREA 332

Farm Maps No. 58 and No. 68 Acreage held 4.1 square miles

This area is considered probable for gas production in the Berea and Weir Sands, the Berea being the more important.

No wells have been drilled within this area.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	558	4.1	1.0	9.2 billion

The above production factor of 4.0 is the production factor as found in the Berea Sand of Sheet No. 4. The rock pressure used, 558 lbs., is the initial rock pressure as found in the Berea Pools on Sheet No. 4.

This estimate seems rather low, and no reduction is made because some production may be obtained from the Weir Sand. One or two test wells should be drilled.

AREA 335

Farm Maps No. 58 and No. 68 Acreage held 1.8 square miles

This area is considered probable for gas production in the Berea Sand, as foreign wells obtaining good production have been drilled throughout the area.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	540	1.8	1.0	3.9 billion

(This includes reserves of well No. 812)

The above production factor is that of the Berea Sand. The rock pressure used, 540 lbs. is the average initial rock pressure for this area. No discount factor is applied.

AREA 339

Farm Maps No. 58 and No. 68 Acreage held 5.1 square miles

This area, lying on the flanks and crest of the Hansford Anticline, a minor fold of the Warfield Anticline, is considered probable for gas production from the Weir Sand. Some gas may be produced from the Berea Sand.

The area is bounded by an oil pool on one side.

Two company wells have been drilled within the area, the initial production averaging about 400 M cubic feet.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
19.0	500	5.1	.50	24.2 billion

(This includes the reserves of wells No. 1092 and No. 295)

The above production factor of 19.0 million feet is that found for the Weir Sand. The rock pressure used, 500 lbs., is the average initial rock pressure of the area.

Since the initial open flow of the two drilled wells is smaller than those of the area from which the factor is derived, and the fact that an oil pool is near, a factor of 50% has been used.

MAP SHEET NO. 4

AREA 402

Farm Map No. 44 Acreage held by United Fuel Gas Co. 1 square mile

This area is classed as probable for gas in the Berea Sand.

The area lies near the crest of a small plunging anticline and is near producing wells.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	546	1.0	1.0	2.2 billion

The production factor used is that for the Berea Sand.

AREA 403

Farm Map No. 45 Acreage held 1 square mile

This area is classed as probable for gas in the Berea Sand.

It is located on the flanks of a plunging anticline, is near producing wells and is practically proven.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	558	1.0	.50	1.1 billion

(Includes the reserves of well No. 593)

The above production factor is determined by the nearest proven Berea Pool. The initial rock pressure is also determined by this pool. The 50% factor is used because foreign wells are depleting the area to some extent.

AREA 404

Farm Map No. 55

This area is classed as probable for gas in the Salt, Injun and Berea Sands.

The company does not hold any acreage in this area.

The area lies on the top and flank of a small dome and has been producing gas for the past ten years. Most of the production comes from the Salt and Injun Sands although a little production has come from the Berea. The area has been practically drilled up except for some offsets to producing wells.

AREA 405

Farm Maps Nos. 45, 54 and 55

Acreage held by United Fuel Gas Co.—1.1 square miles

This area is classed as probable for gas in the Berea Sand.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	570	1.1	1.0	2.5 billion

The production factor is that for adjacent proven areas of the Berea Sand and the rock pressure is the average initial rock pressure of the surrounding area.

AREA 406

Farm Map No. 55

This area is classed as probable for oil in the Berea Sand.

The company does not hold any acreage in this area.

The area lies in the bottom and on the flank of a basin, north and east of the Griffithsville oil pool. All of the wells drilled in this neighborhood produce from one to eight barrels of oil from the Berea and several small wells could be expected in this area.

AREA 408

Farm Maps Nos. 55, 56, 65, 66

Acreage held by United Fuel Gas Co.—51.6 square miles

This area is classed as probable for gas in the Big Lime and Berea Sands.

The area lies on the flanks of the Warfield Anticline and has been well tested. Gas has been found in both the Big Lime and Berea, the latter being by far the more important. The south and east portions of the area have proven more productive in the Big Lime, the northerly and westerly portions productive from the Berea. Most of the company acreage lies in the Berea section of the area.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	509	51.6	75	78.8 billion,

(This includes the reserves of wells Nos. 213, 230, 500, 742, 811, 846, 556 and 1089)

The above production factor is determined by proven areas of the Berea of this section and the rock pressure is the initial rock pressure of the Berea Sand. The factor of 75% is used because the initial open flow of wells drilled in the area is smaller than the initial open flow of wells of the neighboring Berea pools from which the production factor is determined.

AREA 411

Farm Map No. 53 Acreage held by United Fuel Gas Co.

0.1 square miles

Two wells have been drilled in the Big Lime and Berea sands on this acreage. Inasmuch as the wells are not as yet on line, the reserves are classed as probable and they will be useful only when connected to a line.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	550	0.1	1.0	0.2 billion

(This includes reserves for wells No. 473 and No. 580)

The above production factor is that found for the Berea Sand in the Columbia proven area.

AREA 413

Farm Maps No. 66, 75 Acreage held by United Fuel Gas Co. 1.5 square miles

This area is classed as probable for gas in the Big Lime.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.0	330	1.5	1.0	1.5 billion

(This includes reserves of wells No. 633 and No. 838)

The above production factor is that found for the Big Lime and the rock pressure is that of wells completed in the area.

AREA 415

Farm Maps No. 73 and No. 83

Acreage held by United Fuel Gas Co.—3.3 square miles

This area is classed as probable for gas in the Big Lime.

This area is apparently a continuation of the Triple State Field. It lies near the crest of the Warfield Anticline which in this locality has proven more productive than elsewhere in the territory studied.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.9	330	3.3	1.0	4.2 billion

In this estimate, the Triple State factor of 3.9 has been used and a rock pressure of 330 pounds, which is the rock pressure of the Triple State Field as of 1913.

AREA 419

Farm Map No. 74 and No. 75

Acreage held by United Fuel Gas Co.—2 square miles

This territory is proven by five company wells and several foreign wells for gas in the Big Lime.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.9	223	2.0	1.0	1.7 billion

(This includes reserves of wells No. 326, 367, 643, 707 and 734)

The rock pressure used is the present average rock pressure of the company wells.

MAP SHEET NO. 5

AREAS 501, 502 AND 510

Farm Maps No. 82 and 83

Acreage held by United Fuel Gas Co.—12.2 square miles

This area is classed as probable for gas production in the Salt, Maxon, Big Lime and Injun Sands.

The area is located on the axis of the Warfield Anticline between proven areas of the Triple State Field. The information on drilled wells in the proven areas of the field is meager but it is thought that the Big Lime is broken and crevassed due to the intense folding as dry holes have been drilled near good producing wells.

In the proven and vicinity of the proven areas (maps 82 and 83) there have been 115 gas wells, 33 dry holes drilled, and of the 148 tests made, 22% have proven dry.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.9	330	12.2	1.0	15.7 billion

(This includes reserves of well No. 80)

The production of the proven areas has only been calculated from 1913 due to lack of prior information, and our estimate of reserves of probable areas has been based on the past production from 1913—1923 plus the estimated future production of the proven areas.

The rock pressure used is the average rock pressure of the proven areas at the beginning of 1913. The production factor of the field is 3.9 million cubic feet per pound drop per square mile.

POSSIBLE GAS TERRITORY

MAP SHEET NO. 2

AREA 214

Farm Maps No. 40 and No. 50 Acreage held 2.2 square miles

This area is classed as possible for gas production either in the Big Lime or Injun Sands. The area is structurally well located.

One well has been drilled in the area having an initial open flow from the Big Lime of 1,400 M cubic feet, and an initial rock pressure of 540 lbs.

One or two test wells will show whether further development should be carried on.

AREA 215

Farm Maps No. 29 and No. 30 Acreage held—none

This area is well located for gas. The Chestnut Ridge Anticline passes through its center. There have been five gas wells and one oil well drilled within this area but we have very little information regarding them. They are reported productive from the Injun Sand. The sand is reported as having a thickness of 28' in one well and 66' in another. The initial open flow of one well is given as 6,000 M.

This area is worthy of further study.

AREA 216

Map Sheets No. 1 and No. 2

Farm Maps No. 17 and No. 27 Acreage held 6.0 square miles

(Sheet 1—Maps No. 16 and No. 26)

Of the acreage held by the company in this area, about two-thirds is classed as possible for gas in the Berea Sand. The remaining acreage held, lying farther to the west, does not look good but has been classed as possible because of two wells that have obtained production (see Farm Map No. 16).

The structure as indicated by surface indications is very flat. Test wells which have been drilled indicate that the Berea Sand is thinning out in places.

Drilling should proceed from the proven areas "A" and "B," the edge wells of which are large producers.

The acreage held in the west portion of the area (about two square miles) is hardly worthy of a test.

MAP SHEETS NO. 1, NO. 2, NO. 3, NO. 4

AREA 302

Farm Maps No. 37, No. 36, No. 47, No. 46

Acreage held 14 square miles

This area is classed as possible for gas production in the Big Lime and Injun Sands.

There are at present four foreign gas wells producing from the Big Lime with initial open flows ranging from 800 M to 9,800 M; two company gas wells producing from the Big Lime; three small oil wells producing from the Injun; two oil and gas wells and four dry holes.

The position of this area in reference to the Clendenin Pool, and the structural relations make it worthy of at least four or five test wells.

MAP SHEET NO. 3

AREA 314

Farm Map No. 49 Acreage held 2½ square miles

The acreage held by the company borders the probable area No. 307. The proven gas pool situated about a mile to the west has not been defined in its eastern extent and it is possible that it will extend to the acreage here discussed.

This acreage should be held pending the testing of the area No. 307. Two test wells, however, should be drilled to prove or condemn the company acreage held in this area.

AREA 317

Farm Maps No. 48, No. 57, No. 58

Acreage held 24.9 square miles

This area is classed as possible for gas production in the Big Lime, Injun, Weir, and Berea Sands.

The area lies on the flanks and crest of the Warfield Anticline. Judging by experience in the developed portions of the field, the Big Lime is likely to be productive on the crest of the

anticline, and production is likely to be obtained from one of the deeper sands on the flanks.

One well has been drilled near the crest of the anticline and obtained some gas from the Injun Sand. This sand was reported as "badly broken" and other sands thin or missing.

Several test wells will be required to test the area.

AREA 321

Farm Map No. 47 Acreage held 2.7 square miles

This area is classed as possible for small production from the Injun and Squaw Sands. It is located on favorable structure but the sand conditions of surrounding territory are not good. Nearby wells drilled to the Berea horizon indicate that this sand is thin or missing.

Two wells, one in map square No. 64-59 and one in map square No. 66-57 will be sufficient to test the area.

AREA 323

Farm Map No. 57 Acreage held 5.7 square miles

This area is classed as possible for gas in the Big Lime and Injun Sands.

Production from adjoining areas is from the Big Lime and Injun. The area lies on the flank of the Warfield Anticline. One foreign gas well with initial open flow of 400 M cubic feet has been drilled in the northeast portion of the area.

This area should be tested by progressive drilling from the northeast. At least two wells should be drilled.

AREA 328

Farm Maps No. 58 and No. 59 Acreage held 10 square miles

This area is classed as possible although the indications make the territory quite doubtful. The structure is flat and adjoining areas are not very good. The Weir Sand which is the producing horizon to the west is thin in wells drilled near this area, and the Berea Sand is thin or missing. There is, however, a chance for gas in the Big Lime and possibly the Injun.

A dry hole has been drilled in map square 78-53 with show of gas in the Weir, however this does not wholly condemn the area. Other tests may be made in map squares 82-49 and 80-53.

AREA 329

Farm Maps No. 58 and No. 68 Acreage held 6½ square miles

This area is classed as possible. The acreage held in this area lies near the crest of the Hansford Anticline or on its flanks. One dry hole has been drilled in map square No. 76-49, however there is a good chance for gas in either the Weir, Berea, or Big Lime and a lesser chance in the Injun or Keener.

Production from the area adjoining on the west is from the Weir, while the area to the east is productive from the Berea. There is also some Keener or Keener and Injun production near the area.

This area should be tested by progressive drilling from the adjoining productive areas.

AREA 331

Farm Map No. 57 Acreage held 1.8 square miles

This area is classed as possible for gas production in the Big Lime and Weir Sands.

Two foreign wells with production from the Big Lime and one dry hole have been drilled in this area.

The area lies on the flank of the Warfield Anticline. Sand conditions are not very favorable. The nearest wells producing from the Weir are small and the Berea Sand is thin in nearby wells.

One or two wells would sufficiently test the company acreage.

AREA 340

Farm Maps No. 67, No. 77, No. 87

Acreage held 46.9 square miles.

This area is practically unexplored and it has been impossible to determine the underground structure. Surface structure shows no marked features, merely a monocline dipping to the northwest.

The portion of the area situated on farm map No. 77 is quite promising, as there is a group of foreign wells having good pro-

duction from the Weir Sand in probable area No. 344, surrounded by United Fuel Gas Company holdings. The wells referred to are some distance from the United Fuel acreage, the intermediate territory not having been tested.

Inasmuch as the foreign wells are a considerable distance from company holdings, it appears that the best policy would be to hold this acreage without testing until such a time as there is reason for a change in this policy. It is believed that the present foreign wells will have very little effect on company reserves.

AREA 346

Farm Maps No. 78 and No. 88. Acreage held 80.1 square miles

This territory is purely wildcat as very few tests have been made and those made have been unproductive. Surface structure shows a monocline dipping to the northwest with no interruption of consequence.

It would appear logical to make a careful study of this area with the idea of drilling a few test wells to determine the desirability of holding or abandoning acreage. From information at present available, the area does not look attractive.

MAP SHEET NO. 4

AREA 410

Farm Map No. 74 Acreage held 0.6 square miles

This area is classed as possible for gas in the Big Lime.

The acreage is scattered and it is not worth testing under present conditions.

AREA 414

Farm Maps No. 66-65 Acreage held 2.5 square miles

This area is classed as possible for gas production in the Big Lime and Berea Sands because there is production from these sands in adjoining areas. The Big Lime will probably prove the better of the two.

This area, situated along the flanks of the Warfield Anticline, is almost completely surrounded by probable areas.

MAP SHEET NO. 5

AREA 503

Farm Maps Nos. 82, 83, 81, 91, 92

Acreage held 13.9 square miles

This area is classed as possible for gas production.

The coal structure has been worked up for only the eastern portion of this area and little is known of this acreage in Martin County, Ky. A careful study should be made of this area to determine the location of a few test wells.

In the portion of the area in Mingo County, two test holes should be drilled, one in square No. 26-23, the other in square No. 28-25.

AREA 504

Farm Maps Nos. 82, 83, 81, 72, 61, 62, 52

Acreage held 29.6 square miles

This area is classed as possible for gas production from the Maxon Sand and the Big Lime.

The leaseholds in the northern part of this area lie on the flank of the Parkersburg Syncline. A few miles to the west is a large oil pool in the Berea Sand, the initial production however being but three or four barrels. To the east of the acreage is a band of dry holes. Practically all of the acreage is held in fee and as the cost of holding is negligible, it can be held until further foreign testing is carried on.

A number of tests have been made which came in as very small wells or dry holes. A few additional tests are recommended, at least three on leaseholds held on map No. 82 and one in square No. 16-33.

UNFAVORABLE TERRITORY

MAP SHEET NO. 2

AREA 201

Farm Maps Nos. 7, 8, 9, 17, 18

(Area extends also on map sheet No. 1)

This area is classed as unfavorable.

Most of the area and most of the company acreage within the area is located in the Parkersburg Syncline or along its southeastern flank. This syncline is a broad structure, the dip of the beds is slight, irregularities are uncommon and it does not appear a favorable area for the accumulation of either oil or gas. Furthermore a large number of tests have been made and salt water has been found in the Injun and Berea Sands in the trough of the syncline and extending over a considerable area. In a few tests a show of oil has been found in the Berea and a show of gas in the Injun and Berea.

The South Penn Oil Company has made a location in map square No. 62-101. This well should indicate what policy should be followed by the United Fuel Gas Company with leases held in map square No. 60-103.

One test should be made on the acreage in map squares No. 64, 97 and 99. If this test is dry and the test being made by the South Penn Oil Company is likewise dry, all leaseholds on farm map No. 7 can be abandoned without further testing.

The company holds 5.7 square miles located on the area of farm map No. 17 and 12.1 square miles on the area of farm map No. 18. A test made in the area of map square 95-64-66 should indicate the policy regarding this acreage.

Considered as a whole and with the exception of the two test locations suggested, it is believed that any other acreage in this area is of little prospective value.

AREA 217

Farm Maps No. 19, 29, 39, 40

This area is classed as unfavorable. Portions of the area appear to be favorably located structurally but the area has been given a rather thorough test and there appears little probability that gas will be discovered. Test wells in map square No. 90-71 and No. 86-77 would indicate the policy to be followed in regard to acreage held within the area of farm maps No. 29, No. 39 and No. 40. Other acreage held in area of farm maps No. 19 and No. 29 is in small scattered leases and does not seem worthy of further testing.

AREA 218

Farm Maps Nos. 18, 28, 27, 37, 38

This area is classed as unfavorable and recommendation is made that the acreage be abandoned without further testing. Numerous tests have been made throughout the area and no gas or oil of importance has been found.

MAP SHEET NO. 3

AREA 305

Farm Maps Nos. 47, 48, 57

(Connects with Area 401 on Sheet No. 4)

This area is classed as unfavorable. Test drilling has been done at various places in this area through the Berea Sand without success.

Although the area looks very unfavorable, it might be advisable to make a few tests before abandoning the acreage. The more likely locations would be in map squares No. 60-57; No. 60-55; No. 60-53; No. 60-51; No. 60-49. Small oil wells might be found in No. 68-65.

AREA 318

Farm Maps No. 48, 58, 49

This area is classed as unfavorable.

Some twenty-eight wells, five of which are company wells, have been drilled throughout the area and the only encouragement has been small shows. South of area No. 307, the area has not been well tested.

Structurally the area is a broad syncline. Its position on the trend of the Cabin Creek oil pools, the small oil pools in the Kanawha Field and the Injun oil pool located in map squares Ns. 82-84 east, 63-65 north, is the most interesting feature of the area. It would appear possible that oil may be found in the intervening areas.

Information taken from well records indicate that the sands are fairly thick. There is no indication of particularly favorable structure. It may be advisable to make tests in map squares No. 80-61; No. 82-61; No. 82-59; and No. 80-59 before abandoning the acreage.

AREA 324

Farm Map No. 47

This area is classed as unfavorable. It is located on the crest of the Warfield Anticline. A great many dry holes have been drilled in the locality and it appears doubtful that any worth while production can be secured. Short lived wells in the Big Lime are about as good as can be expected.

AREA 327

Farm Map No. 58

This area is classed as unfavorable.

Six dry holes have been drilled within the area. The Weir Sand which is the best producer in neighboring territory is thin in this area and the Berea Sand is thin or missing. No production is found in the Injun Sand.

The acreage should be abandoned without further test.

AREA 337

Farm Map No. 67

This area is classed as unfavorable.

The best chance of getting gas is in the Big Lime. The acreage held is small and is considered of little importance.

AREA 341

Farm Maps No. 67, 78

This area is classed as unfavorable.

This acreage has little to recommend it but should be held pending decision of policy regarding the Raleigh County acreage.

AREA 343

See Area 417

MAP SHEET NO. 4

AREA 401

Farm Maps Nos. 43, 44, 45, 46, 53, 56, 63

This area is classed as unfavorable as many dry holes have been drilled throughout. Structurally, there is nothing of importance yet found.

AREA 416

Farm Maps Nos. 63, 64, 65, 73, 74

This area is classed as unfavorable. Some 21 wells have been drilled within its area and all have been dry holes.

Since this acreage lies in what would seem "gas territory" and several square miles have not been tested, it is recommended that this area be tested in four or five places before surrendering.

AREAS 417 AND 343

Farm Maps Nos. 66, 74, 75, 76, 77

This area is classed as unfavorable. Most wells which have been drilled within the area have been dry holes; however, several producing wells of considerable importance have been drilled in the southwest portion. Company acreage held should be tested before surrendering.

MAP SHEETS NO. 4 AND NO. 5

AREA 418

Farm Maps No. 53, 62, 63

This area is classed as unfavorable. The wells drilled near this area have been proven dry, or only shows have been found. There are no structural features of consequence.

The acreage is considered insufficient to justify a test.

MAP SHEET NO. 5

AREAS 505, 506, 507, 508, 509

Farm Maps Nos. 72, 82, 83

This area is classed as unfavorable. Past drilling has already proven these areas to be dry and they can be abandoned without further tests.

TABLE NO. 4

Rock Pressure Production Data by Wells

(Arranged by Fields and Pools)

Note: Occasionally the rock pressure recorded for a well in a particular year is known from subsequent data to be erroneous. In these cases the erroneous pressure is shown within a bracket and has not been used. In some cases the rock pressure is recorded as "estimated." In these cases the estimated rock pressure is determined from known rock pressures of years immediately preceding and following that in which the pressure is estimated.

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—A

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
717	965	10-27-15					970	940	830	600		260	250	2
1043	850	12-17-18							870	520		220	190	1
1168	470	10-30-20								470		265	190	1
Rock Pressure Totals							970	940	1700	1590		745	630	3
Number of Readings							1	1	2	3		3	3	
Average Rock Pressure							970	940	850	530		248	210	1

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—A

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
7	1 674	10 27 15					58	104	118	296	137	25	46
8	3 536	12 17 18							122	385	162	142	90
9	2 133	10 30 20								42	201	97	109
Production							58	104	240	723	500	264	245
ulative Production							58	162	402	1125	1625	1889	2134

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—B

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
911	890	6-23-17					890	710	550	350		180	160	
933	910	8-12-17					910	840	740	420		225	190	
948	725	11-16-17					725	750	420	320		*230	190	
979	910	10-15-17					910	870	780	410		*230	190	
991	860	10-25-17					860	790	690	320	250	235	180	
1041	630	1-17-19							630	420	365	270	215	
1164	330	2-26-21				.					330	225	180	
1165	320	2-17-21				.					320	210		
1166		1-24-21				.					363	*280	180	
1167	400	12-19-20								400	338	210	185	
1200	380	2-28-21				.					370	240	210	
1202	300	5-27-21									320	175	160	
1209	400	5-19-21				.					408	*280	210	
1286						.							195	
1321						.								
						-								
Rock Pressure Totals							4295	3960	3810	2640	3064	2990	2445	
Number of Readings							5	5	6	7	9	13	13	
Average Rock Pressure							859	792	635	377	340	230	188	

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—B

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
911	4 817	6-23-17					38	147	307	182	110	55	55
933	2 826	8-12-17					35	52	174	234	104	55	44
948	5 253	11-16-17					35	343	357	285	103	54	42
979	4 030	10-15-17					127	68	133	271	130	46	53
991	2 885	10-25-17					21	93	118	176	66	52	41
1041	877	1-17-19							270	238	88	52	25
1164	500	2-26-21									24	55	43
1165	586	2-17-21									70	13	40
1166		1-24-21									128	73	51
1167	920	12-19-20								8	94	56	43
1180	2 405	2-28-21									34	119	112
1182	650	5-27-21									132	92	55
1189	375	5-19-21									23	46	26
1206												4	36
1321													10
Total Production							256	703	1359	1394	1106	772	676
Cumulative Production							256	959	2318	3712	4818	5590	6266

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—C

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
323	935	1-13-10				923	900	670	560	470	190	145	105	75
826	600	3-16-18						610	410	300	220	115	98	75
827	785	10-4-16				785	690	630	480	330	245	155	135	95
880	405	2-11-17												40
893	700	7-13-17					700	670	470	290	175	190	115	70
903	830	6-3-17					813	594	443	250	190		108	65
942	815	11-6-17					815	580	416	280		140	110	
952	825	9-19-17					825	640	460	280		142	120	82
954	790	11-15-17					790	600	520	260	210	130	90	70
972	825	9-24-17					825	600	450	271	200	105	110	75
977	840	8-27-17					840	630	480	240	190			
982	805	9-20-17					805	600	450	260	210	120	110	70
992	830	9-4-17					830	670	430	230	210	125	95	70
1003	810	10-19-17					810	700	490	240		130	90	60
1019	710	2-27-18						690	480	240		90	60	50
1021		8-25-17					742	587	433	250	210		95	75
1038	620	8-21-18							480	230	170	72	70	40
1039	550	10-30-18							480	230	165	85	55	30
1048	570	2-20-19							542		85			14
1078	475	8-12-19							475	210		100	90	70
1089		8-28-20											143	95
1103		5-22-20								358			130	90
1109	210	11-24-19								120	90	56	50	10
1118	230	2-16-20								167	85		42	34
1125	325	6-28-20								250		115	85	65
1153	204	9-10-20								223	194	60	45	45
1160	300	5-1-20								300		205		140
1165	280	8-26-20								320			125	90
1186	200	1-4-21									195	105	85	70
1182	285	11-29-20								285		110	95	70
1192	250	2-17-21									248			70
1228	200	6-15-21									180	85	70	45
1269														
1320														
Rock Pressure Totals						1708	10385	9471	8949	6884	3662	2580	2526	2040
Number of Readings						2	13	15	19	26	20	22	27	31
Average Rock Pressure						854	799	631	471	265	183	117	94	66

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—C

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	1 079	1-13-10				118	353	324	223	294	133	68	57
[illegible]	4 818	3-16-18						82	218	127	43	32	122
[illegible]	1 100	10-4-16				61	210	122	82	53	37	18	13
[illegible]	380	2-11-17					49	22	22	25	9	6	3
[illegible]	5 252	7-13-17					125	126	244	106	35	32	23
[illegible]	10 490	6-3-17					182	209	117	145	50	40	30
[illegible]	8 310	11-6-17					87	424	378	320	80	46	52
[illegible]	6 018	9-19-17					57	179	210	231	94	80	58
[illegible]	5 499	11-15-17					43	176	133	197	102	53	41
[illegible]	11 712	9-24-17					197	264	140	225	89	43	25
[illegible]	6 490	8-27-17					98	182	139	155	26		
[illegible]	5 800	9-20-17					31	166	74	116	61	34	23
[illegible]	8 310	9-4-17					39	154	95	145	52	45	18
[illegible]	4 553	10-19-17					173	408	163	182	19	19	13
[illegible]	21 875	2-27-18						50	240	334	126	53	42
[illegible]	3 706	8-25-17					20	155	137	127	44	34	18
[illegible]	5 850	8-21-18							135	207	26	19	12
[illegible]	2 227	10-30-18							70	81	23	17	11
[illegible]	8 704	2-20-19							82	170	75	52	23
[illegible]	5 253	8-12-19							30	217	123	73	35
[illegible]		8-28-20										28	17
[illegible]	1 511	5-22-20								68	144	54	61
[illegible]	213	11-24-19								22	41	47	19
[illegible]	2 073	2-16-20								81	39	36	8
[illegible]	1 117	6-28-20								53	32	27	17
[illegible]	126	9-10-20								14		10	6
[illegible]	677	5-1-20								78	66	41	17
[illegible]	1 580	8-26-20								56	104	23	44
[illegible]	2 000	1-4-21									107	73	54
[illegible]	920	11-29-20								12	109	51	56
[illegible]	786	2-17-21									26	70	33
[illegible]	1 700	6-15-21									25	72	37
[illegible]												20	29
[illegible]													18
[illegible] Production						179	1664	3043	2932	3841	1940	1316	1035
[illegible]mulative Production						179	1843	4886	7818	11659	13599	14915	15950

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—SALT AREA—CC

Well No	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
205	600	11-15-10				572		442	410				
322	620	10-28-10			622	603		Sold					
324	620	6-1-10			607	533		414		145	Abd.	6-15	1921
550	605	8-6-13			621	617		528	404	325			
711	582	8-26-15			582	526		416		185		98	85
953	560	7-16-17						491	295			215	112
980	455	11-21-17						460	Abd	1919			
981	490	11-10-17						490	225	Sold			
989	560	11-27-17						563	400	300		125	
1096	480	8-2-19							493	230		200	125
1106	525	6-26-19										Sold	1921
1199	270	9-7-20								270		120	80
Rock Pressure Totals					2432	2851		3804	2227	1455		758	402
Number of Readings					4	5		8	6	6		5	4
Average Rock Pressure					608	570		476	371	243		151	101

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—SALT AREA—CC

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
105	650	11-15-10			51	51	72	44	23	10	1		5
122	1 225	10-28-10				22	19	Sold					
134	4 650	6-1-10				125	248	100	222	44	Abd.	6-15	21
150	2 193	8-6-13				127	354	195	168	150	64	18	
171	7 771	8-26-15			443	235	230	141	286	99	101	78	33
183	1 893	7-16-17					73	114	12	12	2	86	48
190	1 726	11-21-17					4	13	Abd.	1919			
191	2 907	11-10-17					7	70	116	Sold			
195	5 817	11-27-17						250	189	209	104	48	42
196	1 188	8-2-19							21	133	73	42	17
198	1 109	6-26-19							9	13	5	Sold	1921
199	1 000	9-7-20								25	71	32	32
Total Production					494	560	1007	927	1046	695	421	304	177
Cumulative Production					494	1054	2061	2988	4034	4729	5150	5454	5631

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—D

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	K
654	645	9- 5-14			650	570	400	330	250	180	155	135	120	
741	775	1- 9-16				780	470	430	350	220	175	195	140	
755	745	3-25-16				780	470	430	350	220	175	195	122	
834	695	10-29-16				695	540	470	370	200		135	122	
862	495	1-31-17					475	425	325	245	165	190	120	
895	605	4-16-17					620	490	390	280	230	190	140	
896	495	5- 8-17					495	395	305	200	190	180	135	
949	520	7-13-17					524	410	329	242		160	125	
976	570	10-24-17					570	480	370	280	210	190	131	
Rock Pressure Totals					650	2825	4564	3860	3039	2067	1300	1570	1155	
Number of Readings					1	4	9	9	9	9	7	9	9	
Average Rock Pressure					650	706	507	429	337	230	186	174	128	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—D

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
64	233	9- 5-14			12	53	94	26	16	18	12	7	6
70	2 188	1- 9-16				104	259	151	105	26	25	45	24
75	4 152	3-25-16				160	262	112	97	134	36	67	43
84	2 500	10-29-16				57	141	88	67	85	18	26	27
82	8 082	1-31-17					253	76	40	13	99	68	58
85	3 757	4-16-17					29	193	138	187	102	55	36
86	3 214	5- 8-17					29	125	121	178	136	122	128
69	3 370	7-13-17					21	71	58	74	38	43	30
93	4 818	10-24-17					20	116	88	146	83	66	45
Total Production					12	374	1108	958	730	861	549	499	397
Cumulative Production					12	386	1494	2452	3182	4043	4592	5091	5488

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—E

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
133	915	5-15-10		620	560	470	300	280	240	200	158	115	100	
138	950	4-28-10	800	715	620	550	500	425	350	315	275	210	142	
145		8-24-08	637	560	461	331	208	173	149	150	104	70	80	
147		10-11-08	670	580	500	400	220	200	170	150	125	87	75	
148	500	7-13-08	680	600	520	350	220	170	150	130	105	80	70	
150		9-9-08	630	550	470	290	210	170	110			Abd.	1922	
159	875	10-16-10	570	520	440	300	280	210				Abd.	1921	
206	875	1-19-11	700	600	560	490	300	250	200	160	155	120	90	
215		4-20-09	700	610	500	400	220	210	170	150	135	100	80	
226	850	2-23-10	540	550	460	320	220	120	140	140	95	45	Abd.	
256	850	7-1-10	580	560	480	330	230	200	180	140	115	90	80	
265	800	1-10-11	620	570	540	400	260	180	170	140	120			
317	820	5-6-09	742	614	555	476	283	249	246	186	161	110	80	
338	700	6-25-11	620	550	450	310	250	150		Abd.	1920			
430	800	11-29-12		564	490	390	250	200	140	70	Abd.	1921		
431	775	11-13-12	700	580	540	450	260	220	180	170			80	
486	507	6-6-13		570	530	440	280	230	220	170	150		80	
536	755	8-5-13	805	700	600	525	450	410	345	165	140	125	122	
664	575	11-23-14			560	575	350	310	250	190	170	110		
681	565	4-9-15			570	500	330	280	230	190	155	126	100	
723	520	5-1-15			585	498	320	313	228	192	177	140	120	
917		4-8-15				Drowned out								
919	410	5-3-13					410	410	320	171	200	150	120	
920	250	10-1-13					260	270	210	150		Abd.	1922	
1143	150	12-8-20								150			Abd.	
Rock Pressure Totals			9994	10613	10991	8795	6611	5630	4398	3479	2540	1678	1419	
Number of Readings			15	18	21	21	23	23	21	21	17	15	15	
Average Rock Pressure			666	590	523	419	287	245	209	166	149	112	95	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—E

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
33	3 190	5 15 10		18	181	93	185	129	34	23	25	10	10
38	6 358	4 28 10	44	46	58	299	434	543	272	213	201	119	89
46	8 000	8 24 08	23	30	44	141	88	79	21	26	16	13	16
47	3 000	10 11 08	106	40	53	116	156	121	29	21	23	19	18
48	4 000	7 13 08	67	47	100	248	153	92	32	27	23	19	22
50	3 000	9 9 08	20	31	25	83	28	3	11			Abd.	1922
54	3 706	10 16 10	215	54	46	135	74	22				Abd.	1921
20	3 000	1 19 11	267	124	36	123	214	188	68	58	59	25	24
25		4 20 09	5	13	26	186	160	107	19	29	25	18	21
23	3 519	2 23 10	90	72	110	180	105	88	32	34	32	9	2
												Abd.	1923
26	6 018	7 1 10	97	72	87	233	246	143	36	42	27	9	24
35	2 626	1 10 11	28	34	51	72	120	66	37	24	20	3	2
37	8 174	5 6 09	112	193	116	163	438	335	171	121	116	77	74
39	2 753	6 25 11	47	35	66	150	95	19		Abd.	1920		
40	1 987	11 29 12		34	20	56	81	66	26	5	Abd.	1921	
41	7 194	11 13 12	239	163	26	137	120	139	41	34	13	13	15
42	6 383	6 6 13		106	27	156	258	139	61	30	9	11	30
52	4 552	8 5 13	11	322	265	292	220	88	91	33	14	29	18
44	1 998	11 23 14			8	79	105	28	47	30	22	16	19
45	942	4 9 15			16	79	74	10	19	12	17	13	12
53	1 475	5 1 15				66	76	10	39	30	38	15	10
57		Drowned out											
58	6 000	5 3 13					176	109	29	18	62	54	44
59	225	10 1 13					15	3	6	8	17	Abd.	1922
60	053	12 8 20								2	14	Abd.	1922
Total Production			1371	1434	1361	3087	3621	2527	1121	820	773	472	450
Cumulative Production			1371	2805	4166	7253	10874	13401	14522	15342	16115	16587	17037

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—F

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
125	930	12 30 09	580	540	420	220	160	120	70	70	40			
131	930	3 17 10	530	480	410	290	200	130	110	100		68	50	
132	940	4 5 10	530	470	380	240	160	100	80	80		39	46	
136	890	5 25 10		540	450	280	170	130	120	70		55	49	
146	705	10 11 08	620		480	220		120			Abd.	1920		
149		12 13 08	627	549	479	263	250	115	118			60	43	
166	800	9 5 10	560	490	450	350	310	220		60		Abd.	1922	
167	900	10 15 10	580	554	509	339	271	200	170		117	97	85	
170	750	7 27 10			402	371	329	230		60	Abd.	1921		
204	360	11 4 10						Abd.	1918					
272	900	3 11 11	530	440	360	200	140	100		52	55	43	42	
686	380	6 29 15			380	240	220			Abd.	1920			
696	350	12 29 15			350	280				Abd.	1920			
697	390	8 9 15			390	220		110	70	50		58	40	
705	450	10 27 15			450	380	120			Abd.	1920			
710	425	11 9 15					290	210	130	80	60	65	50	
978		3 16 16						130	110	72		65	50	
Rock Pressure Totals			4557	4063	5910	3893	2620	1915	978	694	272	550	455	3
Number of Readings			8	8	14	14	12	13	9	10	4	9	9	
Average Rock Pressure			570	508	422	278	218	147	109	69	68	61	51	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—EBREA AREA—F

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
25	8 360	12 30 09	67	73	215	244	223	227	101	50	17	1	
31	13 765	3 17 10	75	24	98	95	102	94	57	28	28	16	13
32	5 790	4 5 10	115	9	113	73	60	58	84	23	5	16	14
36	7 640	5 25 10		39	54	138	116	158	82	58	34	21	16
40	3 000	10 11 08	12		32	70	33	20	9		Abd.	1920	
45	1 380	12 13 08	92	37	89	172	158	115	83	42	37	18	13
46	184	9 5 10	3	2	20	10	23	32	41	9		Abd.	1922
47	6 358	10 15 10	528	45	20	273	142	99	16	8	30	31	24
71	393	7 27 10	22		21	9	28	30	113	9		Abd.	1921
24	083	11 4 10	12						Abd.	1918			
22	9 293	3 11 11	59	49	206	193	184	134	33	6	34	29	23
48	1 419	6 29 15			12	66	48	3		Abd.	1920		
66	877	12 29 15			46	139	83	19			Abd.	1920	
67	2 828	8 9 15			77	106	111	101	68	50	33	18	14
76	354	10 27 15			21	87	34	5		Abd.	1920		
70	12 299	11 9 15				91	352	390	336	68	86	46	33
93	1 200	3 16 18						163	165	90	60	33	17
Annual Production			985	278	1024	1766	1697	1648	1188	441	364	229	167
Cumulative Production			985	1263	2287	4053	5750	7398	8586	9027	9391	9620	9787

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
126	930	3 19 10	460	400	260	180	140	120	90	50		45	42
139	900	5 16 10	430	380	260	180	130	90	70	60			32
156	960	7 18 10	440	400	270	180	140	100	70	70		40	38
157	920	8 2 10	450	390	260	170	140	100	80	60		55	38
158	900	10 14 10	440	380	280	170	140	100	70	60	55	46	38
199		11 4 10	470	350	280		180		Abd	1919			
266	900	12 12 10	440	400	320	160	140	80		80	50	44	39
318	435	9 29 10										Abd	1922
321	790	6 2 10	440	390	260			80				Abd	1922
336	850	5 16 11	480	400	280			120	100	70		Abd	1922
337		6 17 11	449	391	272	200	150	105	80	45		Sold	1921
354	645	11 2 11	440	400	290	200	170	70	70	50		50	55
357		3 3 11	460	390	260	200	140	100	90	Abd	1920		
358	600	5 27 11	450	390	270	200	140	110	100			40	47
372	650	2 10 12	480	380	260	200	100	70	100	53		20	*15
396		4 21 12	450	365	238		130	110		Abd	1920		
539	650	11 21 12	490	330	250	180	80	60	70	50		39	*32
540	650	4 26 13		340	260	160	70	60	60	60		45	55
549	357	6 11 13		400	270	190	150	110	90	55		55	48
572		8 29 13		375	249	193	53	47	Abd	1919			
586		3 2 14		340	263	194	115	90		80		Abd	1922
632	320	10 31 14			270	180	130	90	60	50		49	41
678	265	6 22 15			270	210	140	60			Abd	1920	
699	250	10 9 15			250	180	130	90	80	72		47	
886		2 20 16						92	60	62		51	44
Rock Pressure Totals			7269	7591	6142	3527	2708	2054	1340	1027	105	626	564
Number of Readings			16	20	23	19	21	23	17	17	2	14	14
Average Rock Pressure			454	380	267	186	129	89	79	60	53	45	40

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—G

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	12 500	3 19 10	303	155	179	205	109	76	41	12	21	21	28
[illegible]	24 932	5 16 10	170	99	230	91	47	103	69	21	12	12	13
[illegible]	8 310	7 18 10	135	74	83	127	70	59	55	13	23	19	10
[illegible]	9 293	8 2 10	106	19	85	47	23	18	4	19	13	9	11
[illegible]	9 293	10 14 10	105	9	39	126	107	51	63	33	26	25	20
[illegible]		11 4 10	16	10	16	2	14		Abd.	1919			
[illegible]	7 500	12 12 10	138	22	106	122	55	66	11	9	17	14	9
[illegible]	3 084	9 29 10	30	29	41	45	8	18	2	4	2	Abd.	1922
[illegible]	5 376	6 2 10	94	55	92	25	16	26	10	5		Abd.	1922
[illegible]	9 097	5 16 11	222	82	324	220	123	98	40	30	11	Abd.	1922
[illegible]	10 170	6 17 11	195	34	111	111	30	19	22	21	4	Sold	1921
[illegible]	3 706	11 2 11	178	140	58	30	34	20	8	30	22	15	20
[illegible]	2 626	3 3 11	232	21	65	58	25	18	1	Abd.	1920		
[illegible]	880	5 27 11	210	39	52	57	24	20	8		11	3	4
[illegible]	5 726	2 10 12	325	99	92	67	39	14	1	19	12	3	Abd. 1923
[illegible]	2 753	4 21 12	81	54	65	12	36	28		Abd.	1920		
[illegible]	2 100	11 21 12	167	106	90	27	11	4	4	15	7	4	Abd. 1923
[illegible]	1 800	4 26 13	294	91	133	9	8	3	17	13	11	19	16
[illegible]	5 842	6 11 13		92	191	200	100	83	43	21	46	28	33
[illegible]	2 514	8 29 13		216	115	21	8	3	5	Abd.	1919		..
[illegible]	2 974	3 2 14		44	176	137	70	96	86	39	13	1	Abd. 1922
[illegible]	2 514	10 31 14			141	166	75	143	85	67	51	26	22
[illegible]	892	6 22 15			7	19	44	7		Abd.	1920		
[illegible]	2 616	10 9 15			37	269	173	160	93	67	22	26	
[illegible]	2 500	2 20 16						34	58	42	25	17	16
[illegible] Production			3001	1490	2528	2193	1249	1167	726	480	349	242	202
[illegible]ative Production			3001	4491	7019	9212	10461	11628	12354	12834	13183	13425	13627

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
143			825	446	387		183		Abd.	1919			
160		7-24-10									Abd.	1921	
165	910	9-14-10	600	410	340	245	180	150	110		85	75	65
523	795	2-28-13		303	243	215	125	63	Abd.	1919			
537	650	4-23-13	600	296	255	215	135	100	80			50	35
538	650	4-25-13	600	306	256	187	135	20	Abd.	1918			
543	405	5-17-13	400	290	256	215	140		50			53	45
562	575	7-26-13	510	329	233	198	140	60	40	30			Abd.
651	360	9-19-14			260	240	175	150	120	90		70	50
679	330	12-20-13			298	235	205		170			53	45
831	220	8-7-13				230						Abd.	1921
Rock Pressure Totals			3535	2380	2528	1980	1418	543	570	120	85	301	240
Number of Readings			6	7	9	9	9	6	6	2	1	5	5
Average Rock Pressure			589	340	281	220	158	(91)	95	(60	(85)	60	48

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—H

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
48			19	15		4	18	23	Abd.	1919			
46		7-24-10		2	7	3	10	3			Abd.	1921	
45	13 765	9-14-10	353	225	88	105	172	128	69	37	27	36	33
53	5 000	2-28-13	323	90	129	59	1	7	Abd.	1919			
57	3 700	4-23-13	423	301	92	64	15	15	31	17	15	11	16
58	2 250	4-25-13	245	161	103	37	47	5	Abd.	1918			
66	4 225	5-17-13	202	210	103	61	10	3	62	34	21	23	22
62	3 214	7-26-13	89	201	91	84	24	13	10	9	5	1	Abd.
61	3 020	9-19-14			323	321	195	190	183	184	106	68	1923 38
70	1 225	12-20-13			33	121	37	50	53	36	15	12	9
69	829	8-7-13				1	34	10		2	Abd.	1921	
Annual Production			1654	1205	969	860	563	447	408	319	189	151	118
Cumulative Production			1654	2859	3828	4688	5251	5698	6106	6425	6614	6765	6883

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
151	975	7-9-09		490	390	260	220	170	140	110		58	60
462	895	1-13-13	600	440	380	270		135	118	98		70	70
541	625	7-29-13	600	400	380	280	220	160	105	98		95	80
560	545	10-18-13	545	450	380	280	240	120			Abd.	1921	
561	525	10-22-13	525	410	350	250	180	130	105		Abd.	1921	
Rock Pressure Totals			2270	2190	1880	1340	860	715	468	306		223	210
Number of Readings			4	5	5	5	4	5	4	3		3	3
Average Rock Pressure			568	438	376	268	215	143	117	102		74	70

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—1

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	4 000	7 9 09	203	225	100	100	194	42	97	74	52	48	18
2	4 818	1 13 13	455	166	17	74	88	66	58	47	24	20	13
3	2 841	7 29 13	79	93	13	45	86	88	61	31	33	27	16
4	1 826	10 18 13	59	206	10	100	178	68			Abd.	1921	
5	1 890	10 22 13	24	116	19	99	143	81	40	10	Abd.	1921	
Total Production			820	806	159	418	689	345	256	162	109	95	47
Cumulative Production			820	1626	1785	2203	2892	3237	3493	3655	3764	3859	3906

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
124		6-30-09	972	714	495	310	205						Abd.
144	387	10-30-08	900	580	440	280	200	140	130	105	90	72	58
432	960	10-10-12	950	690	550	320		155	96			52	50
454	920	12-8-12	960	640	440	300	200	120	100	80		53	54
542	415	10-13-15			415	270	180	112				Abd.	1922
600	885	6-20-14		885	570	410		125				54	50
626	850	7-16-14		808	568	343	122	Sold	1918				
649	695	9-3-14		695	610	480	220	138	107	95		55	62
685	510	7-2-15			510	280	170	80	85	52		140	48
698	450	8-9-15			425	270	180						
702	525	5-15-15			525	200	170	Sold	1918				
774	285	8-1-16					130	90	72	62		30	40
975	160	7-7-18						150	120	120	90	62	48
Rock Pressure Totals			3782	5012	5548	3463	1777	1110	710	514	180	518	410
Number of Readings			4	7	11	11	10	9	7	6	2	8	8
Average Rock Pressure			945	716	504	315	178	123	101	86	(90)	65	51

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—J

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
124	4 000	6-30-09	35	93	213	116	52	19	25	13	16	7	Abd. 1922
144	5 000	10-30-08	70	175	69	60	54	41	36	24	10	14	9
162	3 706	10-10-12	24	39	83	77	62	41	33	9	16	13	7
164	7 863	12-8-12	196	470	170	148	106	102	77	35	43	26	19
192	3 578	10-13-15			6	152	41	140	81	18	39	Abd.	1922
180	8 310	6-20-14		116	944	357	197	83	31	6	30	18	12
126	5 821	7-16-14		70	347	93	31	14	Sold	1918			
169	8 682	9-3-14		47	562	595	186	78	24	24	29	27	21
165	3 300	7-2-15			46	88	73	86	48	23	19	6	8
198	5 127	8-9-15			221	162	117	220	167	91	30	30	6
202	1 419	5-15-15			15	55	19	Sold	1918				
124	1 784	8-1-16				26	38	20	34	40	29	15	6
175	168	7-7-18						5	11	10	7	7	8
Total Production			325	1010	2676	1929	976	849	567	293	268	163	96
Cumulative Production			325	1335	4011	5940	6916	7765	8332	8625	8893	9056	9152

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
824	570	8-29-16				600				160		64	
837	355	11-27-16				355		135		Abd.			
840	352	1-18-17					350	150		90			55
841	580	11-14-16				580				100		55	50
876	272	2-26-17					272	140		90		61	54
877	355	2-2-17					310	205	125	150		118	75
879	215	2-6-17					200	190		Abd.	1920		
910	345	5-25-17					330	200	150	110		95	70
931	385	8-16-17					407	280	175	150		75	78
1050	325	2-26-19							240	195	110	102	68
1119	145	3-10-20								110		68	
Rock Pressure Totals						1535	1869	1300	690	1155	110	638	450
Number of Readings						3	6	7	4	9	1	8	7
Average Rock Pressure						512	312	186	173	128	110	80	64

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—K

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	8 309	8 29 16				502	295	86	41	16	10	4	23
[illegible]	1 301	11 27 16				6	78	22	9	Abd.			
[illegible]	9 500	1 18 17					474	211	60	27	11	27	23
[illegible]	4 000	11 14 16				84	61	20	19	20	17	17	10
[illegible]	3 657	2 26 17					157	92	29	17	30	28	19
[illegible]	1 943	2 2 17					357	209	80	72	35	23	19
[illegible]	1 117	2 6 17					38	21	15	Abd.	1920		
[illegible]	2 900	5 25 17					30	176	67	33	10	22	13
[illegible]	3 437	8 16 17					47	181	126	50	28	20	11
[illegible]	1 225	2 26 19							140	91	18	26	12
[illegible]	106	3 10 20								12	5	4	1
													Abd. 1923
[illegible] Production						592	1537	1018	586	338	164	171	131
[illegible]mulative Production						592	2129	3147	3733	4071	4235	4406	4537

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD SPENCER SAND BEREA AREA

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	192
985	635	9-15-17					635	475	275			225	10
1051	435	3-20-19							450	180	140	105	7
1055	595	5-21-19										132	8
1120													9
1121	305	4-30-20								205		105	8
1122	240	11-19-20								242			8
1141		1-24-19								159		92	6
1191	220	1-21-21									220	125	9
1230	150	5-12-21									145	110	7
Rock Pressure Totals							635	475	725	786	505	894	75
Number of Readings							1	1	2	4	3	7	
Average Rock Pressure							635	475	363	197	169	128	8

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—L

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	5 500	9 15 17					217	1138	457	104	12	20	37
[illegible]	4 550	3 20 19							526	294	73	66	49
[illegible]		5 21 19								3	12	20	3
[illegible]		..								92	93	13	73
[illegible]	3 250	4 30 20								173	145	58	31
[illegible]	1 000	11 19 20								12	59	6	14
[illegible]	2 800	1 24 19								93	86	44	23
[illegible]	2 500	1 21 21									165	9	70
[illegible]	300	5 12 21									23	19	15
[illegible] Production							217	1138	983	771	668	255	315
[illegible]ative Production							217	1355	2338	3109	3777	4032	4347

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
463		3- 4-14			600	585		545		495		450	430
501		4-24-13			652	635		585		•585		•475	460
590		2-22-14			610	574		435		330		280	•270
714		7- 6-15			588	590		433		335		•295	272
715		12-17-15				600		440		370		280	234
878	470	5- 2-17						461		429		•280	250
1123	344	10-31-20								344		•270	234
Rock Pressure Totals					2450	2984		2899		2888		2330	2150
Number of Readings					4	5		6		7		7	7
Average Rock Pressure					613	597		483		413		333	307

•Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—INJUN AREA—M

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	213	3- 4-14			2	43	81	87	71	59	45	55	41
[illegible]		4-24-13				14	58	25	8	11	25	20	18
[illegible]	725	2-22-14			3	62	192	115	25	32	25	5	20
[illegible]	1 187	7- 6-15				39	155	139	117	83	56	70	61
[illegible]	338	12-17-15				29	125	95	66	50	50	48	33
[illegible]		5- 2-17							77	135	68	45	29
[illegible]	1 295	10-31-20								2	72	79	82
[illegible] Production					5	187	611	461	364	372	341	322	284
[illegible]mulative Production					5	192	803	1264	1628	2000	2341	2663	2947

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—A

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
257		4-20-10	440		350	335		267	244	237	220	227	150	
436	450	11-18-12	449		200	310		265	223	215		215	195	16
449	410	3-18-13	409		285	280		215	178	170		155	161	14
482	450	4-4-13	446			285	245	212				D. O.		
488	400	5-7-13	485		425	375			292	206		80	47	
489	490	4-28-13	495			300	245	220	185	165	D. O.	D. O.	35	
510	410	4-21-13	445		400	330	285	270	248			200	205	16
524	510	2-7-13	501		377	347		250	202	160	100	100	60	
528	375	6-1-13	455	465	304	285	168		135			100	80	
530	430	6-9-13	475		375	370		320	275	250		231	*200	22
545	420	5-31-13	458		315	285		210	185	110		D. O.	108	
553	420	5-2-13	410		310	265		165		Abd.	1920			
563	485	8-23-13	431			270	225	195	119	95		55	60	
571	450	9-10-13	493	470	392	330		270	208	175		100	125	12
573	315	8-17-14				290	225	228		150	98	65	45	
588	420	12-10-13	420					226	170	170	100	135	105	
617	300	11-19-13				270		200	150	95	85	D. O.	Abd.	192
618	300	8-17-14				275	225	155	140		98	40	38	
619	330	12-20-13	340	340	305	280	215	210	170	135	100	125	100	
620	355	2-3-14		355	300	285	215	200	150	130	98	95	82	
621	400	2-5-14		418	393	340		180	190	112	40	Abd.	3-10-22	
622	390	2-25-14				335	292	250	150	125	105	75	30	
635	350	10-3-14		350	340	320	270	235	190	175	100	100	96	
636	410	10-11-14		420	404	365	308	280	225	225	100	65	98	
645	410	8-11-14			371	300	250	215	145	84		70	52	
646	360	8-6-14		370	383	300	252	225	165	122		115	85	
872	405	1-29-17					405	273	200	142		155	140	
909	260	2-19-17					266	275		115		80	68	
1028	275	7-24-16							97	75				
1029	225	9-16-16						255			Oil			
1035	270	7-12-16						270	210	210		180	130	
1053	225	4-24-17							208	165		175	*175	
1060		9-8-19							275	114		80	75	

*Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—A

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
3 214	4-20-10	49	36	41	28	30	16	7	8		27	15
1 511	11-18-12	62	188	168	100	56	60	74	71	92	124	98
857	3-18-13	12	17	21	119	75	71	102	101	99	96	105
554	4- 4-13	15	28	21	18	26	19	15	4	2	1	1
551	5- 7-13	13	77	102	41	25	44	15	20	30	10	3
1 679	4-28-13	29	342	57	97	227	118	197	153	D. O.		2
786	4-21-13	45	245	238	127	72	62	69	107	135	144	108
3 175	2- 7-13	91	151	96	74	132	133	159	157	53	65	27
1 439	6- 1-13	56	26	24	39	21	16	6	6	41	42	19
527	6- 9-13	44	158	186	125	94	91	105	217	247	241	159
998	5-31-13	51	400	82	82	144	147	189	68	28	20	14
540	5- 2-13	8	15	5	8	9	6		Abd.	1920		
2 767	8-23-13	5	13	22	9	16	15	7	10	29	21	11
1 024	9-10-13	18	22	32	46	55	30	40	22	14	20	16
1 225	8-17-14		21	96	79	109	55	89	96	26	24	3
1 741	12-10-13		115	62	96	98	57	84	75	52	21	19
1 117	11-19-13		5	6	10	21	20	4	4	1	D. O.	Abd. 1923
304	8-17-14		7	9	25	31	9	10	7	7	9	2
1 225	12-20-13		8	7	21	27	21	41	39	12	17	2
2 251	2- 3-14		30	109	107	159	129	163	162	53	70	102
999	2- 5-14		19	27	20	9	4	6	8	12	Abd. 3-10-22	
712	2-25-14		43	94	101	126	101	61	76	36	35	7
1 117	10- 3-14		8	50	39	44	49	62	55	18	21	16
2 278	10-11-14					132	102	126	115	33	22	13
600	8-11-14			40	52	36	27	28	16	17	11	12
600	8- 6-14		5	49	70	42	35	36	27	18	33	22
4 553	1-29-17					43	9	169	207	140	211	202
550	2-19-17					27	56	43	31	17	21	13
575	7-24-18							129	53		Oil	
680	9-16-18							64	27	Oil		
1 590	7-12-18						2	186	188	134	155	138
963	4-24-19							60	94	83	89	61
960	9- 8-19								77	52	59	41

ROCK PRESSURE DATA—Continued

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—A

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
1080	245	9- 2-19							155	147		57	•50	N
1081	210	8-30-19							175		Oil			
1082	180	11-10-19							180	132		90	80	7
1083	280	10-14-19							280	115			90	2
1084		1-13-20								49				D
1085	260	9- 6-19							223	163	119	103	78	6
1087	230	9- 9-19							205	122			72	6
1094		10- 6-19								159		77	85	6
1097		12-22-19												
1113	315	9-10-19							315	65		(15	Abd.	192
1114	230	9-19-19							230	53	100	(17		5
1125	225	9- 9-19								132		90	72	4
1126	225	12-16-19								137		43	•35	4
														19
1127	225	12-17-19								62		D. O.	Abd.	192
1128	300	8-26-19								185		148	128	18
1139		2-14-20								175		D. O.	Exhaust	
1140		6-22-20										158	145	12
1189	215	2- 3-21									154	170	140	14
1302	165	4-17-23												14
1342	155	9- 1-23												13
Rock Pressure Totals			6706	3198	5744	7442	3216	6169	6712	5291	1043	3727	3720	332
Number of Readings			15	8	16	24	13	26	34	38	11	33	38	4
Average Rock Pressure			447	400	359	310	247	237	197	139	95	113	98	8

*Estimated.

ANNUAL PRODUCTION—Continued

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—A

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
180	1 109	9-2-19							16	204	47	40	
181	685	8-30-19								65	Oil		
182	685	11-10-19								84	67	74	50
183	800	10-14-19								79	47	1	Used at Gas. Plt.
184	700	1-13-20								22			
185	880	9-6-19								52		1	28
187	700	9-9-19							7	72	47	1	Gas Used on Lease
194	497	10-6-19								37	19	10	9
197	248	12-22-19								20	14	1	
113	9 800	8-10-19							6	24	11	2	Abd. 1922
114	2 777	9-19-19							3	7	10	3	1
125	1 054	9-1-19								80	76	73	38
126	578	12-16-19								58	33	10	Abd. 1923
127	780	12-17-19								32	2	Abd.	1922
128	680	8-26-19								50	42	28	35
139	728	2-14-20								39	36	D. O.	Exh.
140	1 054	6-22-20								35	125	146	131
189	290	2-3-21									26	27	10
302	134	4-17-23											20
342	605	9-1-23											16
ual Production			498	1989	1644	1533	1886	1504	2378	3261	2083	2026	1567
mulative Production			498	2487	4131	5664	7550	9054	11432	14693	16776	18802	20369

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—SQUAW AREA—A-A

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
280					316	300		195	133	98			65	
316	520	5 4 11	(520)	420	372	345		279	253	245	(220)	155	142	1
341	440	9 28 11			365	336		285	190	175		130	95	D
342	465	10 5 11			358	350		250		187		100	95	
343	450	12 1 11			332	325		200	180	132		82		
458			(400)		316	291		250	150	120		D O	Abd	6
591		12 24 13		410	327	315	(175)	(150)				75	70	
597	320	B.L. & Squaw												
		5 22 14			(305)	(235)	200					*80	70	
599	370	5 11 14			345	313		(207)		192		100	90	
Rock Pressure Totals				830	2731	2575		1459	906	1149		722	627	
Number of Readings				2	8	8		6	5	7		7	7	
Average Rock Pressure				415	341	322		243	181	164		103	90	

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—SQUAW AREA—A-A

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
			76	55	58	22	81	51	49	39	41	33	24
	7 191	5 4 11	221	64	131	98	39	48	19	18	13	190	150
	4 138	9 28 11	202	123	83	111	238	153	261	218	7	52	9
	3 196	10 5 11	81	53	57	54	68	66	77	69	42	41	31
	1 302	12 1 11	49	33	32	29	37	52	60	41	26	26	5
			77	69	44	22	57	63	91	35	28	Abd.	6 2 22
	1 301	12 24 13		54	45	20	14	15	50	40	37	43	13
	BL 186	B L. & Squaw											
	2 018	5 22 14		5	26		24	12	41	31	37	39	23
	3 536	5 11 14		13	9	47	80	140	119	94	65	71	80
Production			706	469	485	403	638	600	767	585	296	495	335
ulative Production			706	1175	1660	2063	2701	3301	4068	4653	4949	5444	5779

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
8	500	12-26-03	422	415	410	408	370	350	Abd.	3-11	19		
14	505	12-22-05	(410)		(410)	(405)		(340)	(318)		(295)	(260)	230
25	520	12-6-05	402	370	367	358		305	295	277		285	225
26	505	5-14-07	408	395	382	386		324	305	272		245	230
28	500	8-13-06	436	413	420	417		Abd.	2-23	18			
29	505	7-2-06			410	400			330	295	280	250	220
31	505	10-30-06	440	425	425	396		337	298	272	240	245	
33	480		447	425	419	401		333	285	263	237	220	170
39	505	5-14-07	410	390	388	375		325	300	272		245	200
43	500	11-15-07	432	410	400	410	399	340	318	300		308	252
45	505	3-15-08	425	395	387	376	(300)	317	305	277		252	230
53	530	4-2-09	436	417	408	400	366	350	313		270	180	220
118	515	4-18-07	442	415	406	395	320	316	300		(245)	260	240
129	490	3-2-10	432	417	408	401		340	330	295		230	210
232	425	12-27-11	424	417	409	404	(305)	333	309	295	284	252	225
235	400	3-14-10	427	(405)	(401)	396		335	310	302	292	255	225
255	450	4-19-10	423	407	420	(395)	355	350	316	298	275	245	205
398	460	7-25-12	445	415	408	400		338	320	290		262	235
422	500	10-5-12	448	417	419	411		359	339	303	286	240	225
466	390	7-3-15			385	383	330	317	290	270	250	245	205
477	430	7-8-13	455	430	411	394		326	300	292		260	235
478	445	3-28-13	468	440	417	400	360	327	308	298	274	262	238
480	450	6-5-13	477	450	432	402	365	342		258		200	180
481	425	4-21-13	493	460	426	392	380	340	310			195	180
525	410	3-9-13	477	445	428	406	341		295	218		153	133
544	400	9-11-13	402	390	379	373	343	318	305	280		255	215
555	430	7-9-13	428	435	414	404	360	345	300	280		250	195
565	425	12-6-13		460	432	410	365	344	317	305		265	240
577	430	7-16-15			430	414	380	350	310	249		220	200
579	427	5-15-13		430	416	396		323	300	292	263	235	228
584	430	11-15-13		465	447	437		350	318	285	270	240	240
611	455	5-27-14		(475)	458	424		370	322	(365)		295	202
628	375	11-24-14			373	369	318	315	305			252	220
629	390	1-27-15			390	383	332	315	305	277		259	215

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—B

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	8 616	12 26 03	153	57	5	32	26	73	Abd.	3 11	19		
2	7 038	12-22 05	59	20	2	30	132	53	47	58	56	102	69
3	7.075	12 6 05	100	56	10	61	51	67	70	65	74	69	77
4	6.075	5 14 07	63	31	13	23	54	31	37	29	16	11	12
5	7.182	8 13 06	5	8	2	2	7	Abd.	2 23	18			
6	2 950	7 2 06			2	6	41	68	32	69	21	32	22
7	4 553	10 30 06	67	40	69	46	36	21	22	21	3	1	53
8	6 075		72	49	79	72	80	62	60	58	11	35	104
9	6 075	5 14 07	34	18	31	32	30	35	36	33	12	19	77
10	2 551	11 15 07	14	44	119	61	17	92	71	49	39	45	40
11	5 198	3 15 08	72	45	9	42	50	48	45	37	28	47	22
12	3 687	4 2 08	11	12	2	5	76	27	24	29	13	8	22
13	10 500	4 18 07	155	46	32	35	57	50	49	36	35	53	50
14	7 475	3 2 10	3	10	2	5	66	52	25	40	34	41	26
15	2 356	12 27 11	14	7	2	7	82	39	40	36	31	47	36
16	10 170	3 14 10				48	117	46	62	67	65	109	88
17	2 626	4 19 10	7	7	4		70	61	32	25	25	42	30
18	6 079	7 25 12	103	175	3	14	119	105	48	68	42	30	17
19	5 253	10 5 12	9	4	5	27	37	31	22	13	13	21	27
20	1 179	7 3 15			10	51	36	45	48	45	17	35	174
21	2 652	7 8 13	40	69	86	47	106	57	62	37	34	46	52
22	5 571	3 28 13	50	79	85	56	105	75	79	47	12	28	34
23	766	6 5 13	19	34	61	48	93	54	91	17	98	97	79
24	1 224	4 21 13	24	46	70	28	41	34	58	121	101	170	132
25	1 770	3 9 13	4	5	15	8	22	13	39	95	13	23	42
26	1 136	9 11 13	10	40	60	5	53	75	39	21	11	39	42
27	1 987	7 9 13	17	24	2	7	110	52	64	51	26	54	121
28	5,817	12 6 13		71	59	86	155	140	123	88	56	103	100
29	2 079	7 16 15			29	62	89	60	84	262	220	153	126
30	2 797	5 15 13		34	27	46	68	68	56	36	32	43	42
31	3 959	11 15 13		14	2	14	101	59	48	40	45	60	49
32	2 937	5 27 14			73	7	124	96	88	66	67	39	19
33	2 185	11 24 14			18	38	81	45	46	32	26	19	27
34	2 251	1 27 15			19	39	78	39	45	35	28	25	24

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
667	400	4- 2-15			382	373	325	318	315	280		250	225
671	400	5-20-15			402	397	350	325	308	295		268	232
682	370	7-27-15			(363)	363	335		300	267	(280)	255	225
691	400	8-17-15				398	(310)	325	315	287		295	230
692	400	10-30-15				394	380	332	300	295		268	230
718	415	10- 7-15				416		362	346	(335)	293	260	240
727	400	12-16-15				393	360	327	300	270		260	230
728	410	11-15-15				402	355	338	295	258		202	170
730	385	12-13-15				385	360	323	300	268	240	240	210
930	360	7- 4-17						331	300	295		268	240
964	345	4- 2-18						335	315	287		260	240
1057	310	12- 8-19								300		240	210
1103	325	1-27-20								325		220	195
1124	310	3-23-20								293		265	225
1133	280	7-30-20								281		250	252
1190	210	11-30-20											
1267	250	8- 9-22											215
1268	..												243
1284	290	2-27-23											
1285	250	12- 9-22											228
1303	217	1-20-23											
1305	190	4- 6-23											
1344	250	12- 4-23											
1345	200	8- 4-23											
1351	245	10-24-23											
Rock Pressure Totals			10072	10948	13159	16242	8169	13350	12652	10991	3514	10896	10708
Number of Readings			23	26	32	41	23	40	41	39	13	44	49
Average Rock Pressure			438	421	411	395	355	334	309	282	270	248	218

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—B

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
67	1 892	4- 2-15			17	18	76	43	52	37	26	20	22
71	3 490	5-20-15			31	27	70	59	55	36	26	37	33
82	1 119	7-27-15			17	9	71	67	34	36	25	23	12
91	3 493	9-17-15				7	109	107	84	62	39	37	38
92	1 592	10-30-15				34	83	68	71	51	43	66	47
118	1 25	10- 7-15				23	48	49	27	35	26	38	45
127	1 117	12-16-15				32	49	29	27	21	16	28	40
128	2 192	11-15-15				63	73	82	54	50	12	17	44
130	999	12-13-15				25	42	39	39	38	9	30	119
90	1 930	7- 4-17						77	75	58	43	58	71
94	1 120	4- 2-18						19	31	23	19	24	12
57	4 257	12- 8-19								43	35	37	32
03	1 119	1-27-20								14	18	11	23
24	2 100	3-23-20								20	25	32	70
33	1 300	7-30-20								6	32	39	24
90	1 700	11-30-20								11	1		
67	500	8- 9-22										14	33
68												18	30
84	431	2-27-23											27
85	789	12- 9-22											24
03	1 187	1-20-23											229
05	915	4- 6-23											59
44	1 770	12- 4-23											
45	586	8- 4-23											
51	1 593	10-24-23											16
Total Production			1105	1045	1072	1328	3031	2511	2241	2267	1699	2175	2885
Cumulative Production			1105	2150	3222	4550	7581	10092	12333	14600	16299	18474	21359

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—C

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	N
42	480	4-30-07	385	(352)	369	(299)	325	323	280	270		250	185	
46	505	5-4-08	370	362	341	330		306	285	239		D.O.	190	
121	450	5-10-09	372	357	352	340		(300)	305	(248)		265	195	
175	505	9-20-10	383	377	(385)	363		330	285	280		245	185	
180	443	1-18-11	388	(367)	(386)	361	340	335	290	280		255	210	
225	480	10-28-11 1908	(425)	(435)	442	428		353	285	275		240	*205	
293	440	8-9-11	(400)		(330)		(310)	(265)				(245)	205	
627	355	10-4-14			(356)	358		(300)	300			263	205	
764	380	11-16-16				(390)		325	265	250		230	170	
950	320	9-4-17					315	300	283	251		265	200	
Rock Pressure Totals			1898	1096	1504	2180	980	2272	2578	1845		2013	1950	
Number of Readings			5	3	4	6	3	7	9	7		8	10	
Average Rock Pressure			380	365	376	363	327	(325)	286	264		252	195	

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—C

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1021	1922	1923
		1909											
42	2 923	4-30-07	13	52	56	19	8	35	31	22	34	34	99
46	6 089	5-4-08	31	17	23	3	21	25	6	17	5	12	8
121	5 100	5-10-09	43	41	21	23	20	39	23	20	23	23	25
175	1 802	9-20-10	21	52	47	33	42	53	38	26	33	48	75
180	3 214	1-18-11	31	105	92	48	47	68	49	38	44	64	154
225	1 671	10-28-11	7	39	21	25	57	45	25	18	17	25	31
		1908											
253	789	8-9-11	72	56	45	74	73	59	48	47	67	73	56
327	2 929	10-4-14			29	32	38	38	20	25	20	20	17
364	1 119	11-16-16					71	105	122	76	92	91	50
490	2 626	9-4-17					8	37	34	26	28	24	29
Annual Production			218	362	334	257	385	504	396	315	351	414	544
Cumulative Production			218	580	914	1171	1556	2060	2456	2771	3122	3536	4080

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—CC

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
746	500	2-9-16				493	480	460	400	385	(391)	370	340
941	475	6-13-17					(393)	(420)	430	425	(424)	370	260
Rock Pressure Totals						493	480	460	830	810		740	340
Number of Readings						1	1	1	2	2		2	1
Average Rock Pressure						493	480	460	415	405		370	340

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—CC

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
746	3 706	2-9-16				7	182	162	150	148	92	109	185
941	513	6-13-17					32	85	43	62	28	20	19
Total Production						7	214	247	193	210	120	129	204
Cumulative Production						7	221	468	661	871	991	1120	1324

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—D

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	192
41	...	8- 8-07	310	310	310		270					190	•160	19
48	505	6-23-08	360	340	326	321				205		172	147	15
54	500	5-30-09	325		314	309		250		239		175	•150	16
56	(205)	9-24-09	313		295	297	250	260				190	118	11
141	390	6-11-10	308	310	310	308	280			200		185	160	15
142	410	7-22-10	333	320	335	320	303	285	247	235		192	170	16
161	375	8- 1-10	315		310	305	320	280		200		185	170	14
179	425	4-22-10	315	312	308			260		240		175	190	16
198	385	8- 3-10	322		307	305		265	(206)	200		170	155	15
209	505	12-17-10	470		303	303	260			210		180	175	15
211	510	3-28-10	381	340	300	300	250			172		140	110	14
212	525	12-28-06	360	349	336					218		200	D.O.	D.O
241	425	12-18-09	320		308	303		260		195		•200	180	14
246	420	3- 5-10			316	300			220	175		(90	D.O.	14
258	505	1- 8-11	340	345	347	329	220	310	257	247		210	200	18
1205	230	7-11-23												20
1307	200	9-13-23												17
1323	195	11-29-23												15
Rock Pressure Totals			3011	1651	3820	3700	1093	2170	724	2736		2564	2085	256
Number of Readings			9	5	12	12	4	8	3	13		14	13	17
Average Rock Pressure			335	330	318	308	273	271	241	210		183	161	15

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—D

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	8 265	8- 8-07	49	62	28	16	196	165	147	103	109	105	40
4	6 650	6-23-08	180	28	24	15	2	41	183	107	148	180	132
5	2 082	5-30-09	34	27	21	12	85	71	55	14	19	16	9
6	2 000	9-24-09	19	15	9	5	66	59	48	30	43	38	37
11	3 039	6-11-10	33	25	17	7	180	225	167	76	125	180	148
12	2 303	7-22-10	19	75	32	19	12	9	5	13	18	36	97
13	5 083	8- 1-10	52	110	47	53	3	55	248	186	250	307	260
17	1 224	4-22-10	44	25	20	16	70	74	60	4	65	56	14
18	2 753	8- 3-10	40	71	42	33	192	177	125	61	99	120	107
19	2 352	12-17-10	57	53	26	16	106	119	113	50	126	143	119
21	2 626	3-28-10	25	23	10	9	48	44	35	26	27	30	38
22	3 108	12-28-06	91	11	15	14	6	23	64	39	10	140	
24	2 357	12-18-09	33	24	11	7	102	89	88	53	31	21	32
26	2 190	3- 5-10	51	31	14	24	17	33	20	18	6	11	32
28	1 119	1- 8-11	12	19	26	17	31	13	6	6	7	32	23
35	789	7-11-23											7
37	969	9-13-23											5
33	1 008	11-29-23											
Total Production			739	599	342	263	1116	1210	1364	786	1083	1415	1100
Cumulative Production			739	1338	1680	1943	3059	4269	5633	6419	7502	8917	10017

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—E

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	192
229	410	10- 7-09			310				270			192	190	*18
234	450	11-17-09	363	350	347	315	320	300	275	270	230	210	190	18
244	460	1-15-10	355		331	333		290	270	250		220	185	14
288	380	10-25-10		320	310	306			268	240		210	200	*19
294	505	1- 9-11		330	331	275		285	255	214	189	180	145	9
329	400	7- 9-11	365	368	360	341		310	290	248		200	195	18
344	440	10-21-11	385	385	374	365		310	290	270		235	210	16
594	360	5-23-14		360	337	347	318			277	275	238		21
606	380	2-24-15			380	377	370	300	293	275	250	220	205	17
625	380	9-30-14			380	372	370	320	288	275	250	215	200	17
650	380	11-28-14			380	373		310	288	270	250	215	200	16
668	360	4-28-15			362	360		300	285	265		220	200	15
738	340	4-14-16				340	335		285	265		230	205	17
761	380	6-11-16				380		320	300	275	250	220	210	18
965	320	1- 6-18						320	293		250	230	205	18
966	365	9-21-17						330	292	272	250	235	200	18
1105	255	3- 2-20								270		250	220	19
Rock Pressure Totals			1468	1415	2914	2839	973	3375	3679	3936	1669	3298	3160	26
Number of Readings			4	4	8	8	3	11	13	15	7	15	16	1
Average Rock Pressure			367	354	364	355	324	307	283	262	238	220	198	16

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—E

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
	1 314	10- 7-09	21	5	10	23			5	3	4	1	4
	2 626	11-17-09	57	77	33	79	16	24	14	14	12	24	30
	3 399	1-15-10	56	171	182	174	39	42	28	20	31	14	27
	787	10-25-10	37	54	47	41	1	1	6	6	8	3	5
	787	1- 9-11	82	25	19	38	2	1	1	1	10	1	3
	3 214	7- 9-11	35	21	33	76	22	40	28	30	23	5	11
	4 152	10-21-11	69	33		3	28	24	18	14	20	18	18
	1 117	5-23-14		12	53	48	33	24	17	11	10	16	13
	2 694	2-24-15			7	3	56	55	57	51	31	59	45
	1 831	9-30-14			12	1	28	38	33	30	21	26	39
	3 108	11-28-14			14	2	36	42	33	30	19	34	27
	3 062	4-28-15			39	2	53	52	43	30	31	19	29
	2 797	4-14-16				3	46	51	40	31	30	25	25
	3 337	6-11-16				2	52	40	24	22	17	34	25
	1 554	1- 6-18						29	21	18	14	10	11
	3 422	9-21-17						74	29	24	24	24	18
	1 475	3- 2-20								8	30	31	32
Production			357	398	449	495	412	537	397	343	335	344	362
ative Production			357	755	1204	1699	2111	2648	3045	3388	3723	4067	4429

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—F

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
18		2-18-06	388		375	370	340	323			275	250	205	
19	500	3- 8-06	(370)		366	363	353	314	280	270	(271)	250	210	
20	520	5-16-06	391	390	(380)	384		339	313	295	285	240	235	
21	430	4- 3-06	395		378	360		321	293	274	270	250	210	
23	500	8-23-05	374	380	380	378		333	310	290	283	265	230	
24	520	11- 3-05	370		370	363		314	310	263	275	D.O.	215	
27	485	11-22-06	398	383	(383)	(384)		302	305	285	277	240	195	
35	505	1-27-07	380	362	(310)	366		300	307	282	265	260	240	
37	505	3- 9-07	370		374	367		318	300	280	271	250	210	
116	500	1-29-07	390		376	360		321	295	270	(271)	250	205	
117	500	7- 5-07	385		373	360	337	320	(250)	(268)	271	250	205	
236	405	2-25-10	397	400	(396)	(395)	365	(300)	308	300	285	255	220	
254	402	3-30-10	384	380	379	(380)		328	310	298	279	255	200	
507	425	5-15-13		412	395	(395)		306	288	280	263	(215)	195	
601	365	8- 5-14			374	(378)		316	307	282	271	250	210	
616	380	8-13-15			373	360	330	320	290	(268)	(270)	250	210	
656	395	1- 1-15			393	(393)	365	341	308	300	291	260	230	
963	345	11- 1-17						316	300	278	..	260	230	
1176	255	4-29-22											215	
1184	270	12- 4-21											220	
1188	260	2-23-22											210	
1219	250	4-16-21									266	225	205	
1319	240	5-11-23												
1336	248	7- 7-23												
Rock Pressure Totals			3508	1185	4906	4031	2090	5432	4824	4247	4127	4260	4705	44
Number of Readings			9	3	13	11	6	17	16	15	15	17	22	
Average Rock Pressure			390	395	377	366	348	320	302	283	275	251	214	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—F

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
7 182	2-18-06	113	126	109	84	102	99	79	109	26	83	86
10 526	3- 8-06	77	111	75	51	63	54	73	98	28	97	143
3 856	5-16-06	75	32	10	25	79	50	59	42	33	53	31
9 114	4- 3-06	128	112	100	83	94	104	86	104	20	108	121
8 326	8-23-05	35	21	7	10	25	16	26	25	17	33	21
11 000	11- 3-05	3	2	1	1	7	3	14	12	1	9	18
2 223	11-22-06	27	5	3	4	38	20	26	22	22	38	20
3 925	1-27-07	29	12	31	6	8	1	5	6	5	13	14
7 190	3- 9-07	86	72	34	61	63	55	72	44	30	66	51
7 473	1-29-07	66	63	66	44	38	41	31	34	6	29	34
5 000	7- 5-07	20	17	24	17	9	16	19	22	5	25	22
4 553	2-25-10	78	17	6	39	99	35	67	65	57	103	68
5 810	3-30-10	141	21	16	30	182	98	89	99	85	169	113
2 797	5-15-13		38	4	32	105	33	41	36	32	36	29
2 555	8- 5-14			6	11	56	40	46	38	26	46	49
4 152	8-13-15			28	54	66	52	58	63	12	62	58
5 359	1- 1-15			5	26	101	57	62	67	58	104	73
842	11- 1-17					5	26	25	20	20	36	33
2 675	4-29-22										28	65
2 200	12- 4-21										79	49
2 900	2-23-22										68	57
1 200	4-16-21									9	33	29
744	5-11-23											7
750	7- 7-23											10
Production		878	649	525	578	1140	800	878	906	492	1318	1201
ative Production		878	1527	2052	2630	3770	4570	5448	6354	6846	8164	9365

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
7	550	6-30-03	410	395	395	(393)	360	323	323	290	288	(240)	•235
10	505	11-22-04	400			390		340	332			280	•240
16	500	1905			385	387	(392)	348	336	305	291	275	248
17		1-21-06	407	390	383	395			335		284	265	•235
22	500	5-24-06	(400)	400	383	386		346	325	305	296	265	240
36		2-11-07	410	390	395	401		350	338	300	292	270	240
51	500	12-12-08	400	390	395	393	385	343	331	300	294	270	235
Rock Pressure Totals			2027	1965	2336	2352	745	2050	2320	1500	1745	1625	1673
Number of Readings			5	5	6	6	2	6	7	5	6	6	7
Average Rock Pressure			405	393	(389)	(392)	(373)	342	(331)	300	(291)	271	239

•Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—G

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
7	3 400	6-30-03	28	15	3	14	50	39	21	30	16	5	9
4	8 638	11-22-04	110	69	425	62	204	176	85	108	114	164	52
6	4 048	1905	210	128		7	31	13	9	17	6	18	13
7	3 300	1-21-06	29	16	2	21	127		20	16	27	67	56
2	8 428	5-24-06	68	38	55	38	116	83	73	73	79	116	70
6	2 650	2-11-07	17	11	2	17	52	36	22	21	17	17	18
5	3 607	12-12-08	29	16	3	27	59	51	35	42	23	50	17
Production			491	293	490	186	639	398	265	307	282	437	235
ulative Production			491	784	1274	1460	2099	2497	2762	3069	3351	3788	4023

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—H

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
459	480	1-17-13	479	430	395	355		305		280	(280)	240	210
460	500	3-24-13	(500)	460	382	(337)		340				275	175
533	455	7-22-13	455		360	343	312			285	278	240	210
559	485	10-10-13	485	455	383	335			(270)	(255)		270	190
568	410	12-5-13			400	385	385	348	315			285	250
569	410	9-24-14			390	385	367	341	315	310		268	235
570	470	12-1-13			390	370	345	330	317	300		265	240
583	460	3-20-14			357	310		265	(260)	(240)		250	155
596	450	2-7-14			486	430		360	340	322	(260)	310	250
614	420	6-9-14			481	405	400	398	378	340	335	300	290
690	340	10-14-15				(300)		(270)				(275)	195
745	495	1-17-16				497		445	370		(275)	(395)	325
760	480	5-2-16				386			300	280	(300)	260	220
805	375	7-15-16				373		325		280	(283)	245	200
819	435	10-26-16				435	405	405	381	350	342	310	290
1098		5-28-20								(394)	(400)		225
1198	320	11-1-20								320		275	255
1324	285	8-23-23											
1330	290	9-8-23											
1333	255	6-22-23											
1338	270	7-18-23											
1346	290	12-19-23											
Rock Pressure Totals			1419	1345	4024	5009	2214	3862	2716	3067	955	3793	3915
Number of Readings			3	3	10	13	6	11	8	10	3	14	17
Average Rock Pressure			473	448	402	385	369	351	340	307	(318)	271	(230)

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—H

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
49	4 452	1-17-13	95	76	83	44	42	44	34	24	10	21	17
60	4 552	3-24-13		41	39	51	28	27	30	22	65	65	105
63	3 161	7-22-13	91	73	93	48	23	40	35	17	28	54	46
59	5 252	10-10-13	19	81	124	54	29	41	41	24	69	80	134
64	992	12-5-13		153	85	67	59	28	61	76	124	183	75
69	1 117	9-24-14		7	129	67	50	35	47	102	119	166	119
50	2 702	12-1-13		77	105	73	33	29	59	109	120	246	213
65	5 252	3-20-14		139	151	86	32	32	10	18	48	98	176
76	840	2-7-14		14	28	66	59	44	49	40	45	66	104
84	1 989	6-9-14			151	223	188	292	194	216	81	93	97
90	368	10-14-15			17	35	13	16	29	22	37	54	98
86	970	1-17-16				25	36	42	147	39	116	101	154
88	1 225	5-2-16				3	22	27	28	19	15	28	22
85	492	7-15-16				3	32	45	31	21	17	28	28
89	550	10-26-16				4	72	47	36	45	44	48	46
96	550	5-28-20										30	67
94	1 400	11-1-20									170	108	62
93	524	8-23-23											23
91	326	9-8-23											6
95	1 947	6-22-23											118
92	789	7-18-23											15
96	1 300	12-19-23											
Annual Production			205	661	1005	849	718	789	831	794	1108	1469	1725
Cumulative Production			205	866	1871	2720	3438	4227	5058	5852	6960	8429	10154

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
169	485	8-11-10			393	373		315	265			*285	285
201	490	11- 9-10	403		364	353			265	250		255	235
203	490	11-16-10			(278)	(263)			260	245		*200	172
281	420	2-19-11	(340)		(300)	(286)			262	250		*185	160
445	410	Big Lime	355		(256)	(232)						155	135
608	320	5- 5-14		(320)		325		265	235	220		230	185
884	240	3- 2-15					(263)	(110)				150	140
891	400	5-28-17					(423)			250		225	205
1185	200	4-28-23											
1299	225	2- 1-23											
		Injun &	Keener										
Rock Pressure Totals			403		757	1051		580	1287	1215		1685	1517
Number of Readings			1		2	3		2	5	5		8	8
Average Rock Pressure			403		379	350		290	257	243		211	190

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—I

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
9	2 272	8-11-10	250	199	163	143	497	418	390	337	356	396	135
1	1 225	11-9-10	71	78	63	54	139	166	147	93	50	110	95
3	2 251	11-16-10	103	44	34	38	161	180	180	114	121	58	59
1	2 514	2-19-11	81	74	45	46	163	179	172	102	109	115	82
6	654	Big Lime	42	23	9	2	98	109	80	48	55	67	50
8	431	5-5-14		7	46	31	53	71	72	50	57	58	43
4	2 166	3-2-15					23	76	61	49	83	146	122
1	1 117	5-28-17					57	122	140	130	130	162	128
5	918	4-28-23											59
9	1 494	2-1-23											151
		Injun & Keener											
Production			547	425	360	314	1191	1321	1242	923	961	1112	924
lative Production			547	972	1332	1646	2837	4158	5400	6323	7284	8396	9320

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—J

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
844	500	11-26-1(				500		455	425	365	350	300	260	2
955	495	7-25-17					523	480	440	368	338	290	255	2
956	525						518	484	439	385	353	320	280	2
957	510	10-6-17						480	450	395	377	340	300	2
958	510	12-20-17						480	435	380	358	300	270	2
984	510	9-12-17					518	480	440	380	355	300	300	2
994	500	2-27-18						480	440	395	370	330	300	2
1007	510	10-19-17						481	431	378	338	285	250	2
1008	500	1-7-18						480	450	398	382	330	300	2
1009	510	12-21-17						486	450	390	370	310	280	2
1015	510	11-28-17						490	455	395	382	320	290	2
1016	490	3-27-18						482	438	398	363	230	290	2
1132	405	5-22-20								417		320	285	2
1161	395	10-30-20 (Inj & Keener								395	378	333	300	2
1162	340	(1-5-21									343	295	260	2
1163	395	(3-3-21 (Inj & Keener									363	315	280	2
Rock Pressure Totals							1559	5758	5923	5439	5420	5018	4500	40
Number of Readings							3	12	12	14	15	16	16	
Average Rock Pressure							520	480	441	389	361	314	281	2

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—J

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	9 644	11-26-16					124	44	37	48	29	40	38
[illegible]	6 358	7-25-17					64	86	59	80	82	88	74
[illegible]	3 706						39	74	69	103	66	94	109
[illegible]	2 357	10- 6-17					73	51	80	119	78	101	128
[illegible]	4 152	12-20-17					10	94	67	89	62	91	98
[illegible]	3 270	9-12-17					37	61	64	94	57	85	99
[illegible]	2 500	2-27-18						30	72	115	78	93	108
[illegible]	5 857	10-19-17					76	104	48	83	80	100	84
[illegible]	2 626	1- 7-18						73	77	92	65	97	125
[illegible]	4 553	12-21-17					3	74	72	105	69	94	122
[illegible]	7 230	11-28-17					11	23	56	77	53	76	85
[illegible]	2 356	3-27-18						26	49	83	65	128	96
[illegible]	2 166	5-22-20								24	189	163	139
[illegible]	1 053	10-30-20								19	188	216	135
[illegible]	K. 525	1- 5-21									106	114	64
	L. 722 Injun &	Keener											
[illegible]	790 Injun &	3- 3-21 Keener									91	115	72
[illegible] Production							437	740	750	1131	1358	1695	1576
[illegible]ulative Production							437	1177	1927	3058	4416	6111	7687

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—K

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
5	500	1901	462	442	440	439		382	367	330	316	275	270	
30	500		474	(457)	(450)	439	(380)	381	345	325	313	275	255	
50	500	10- 5-08	(437)	440	439	425	(349)	345	331	300	295	270	242	
200	475	11-19-10	445	442	440	430		365	346	325	317	282	257	
245	540		464		466	435		380	371	340	323	285	270	
260	480	4- 1-11	475	475	470	450		(360)	360	325	325	292	253	
490	430	5-27-13		465	450	430	401	380	365	345	320	280	255	
491	405	4-30-13		460	442	420	391	380	365	340	320	(240)	220	
492	435	Keener 4-14-13	(460)	(460)	(450)	(425)	(410)	(386)	(363)	(341)	(325)	(285)	270	
493	430	4-14-13	458	453	445	435		370	345	337	312	292	230	
574	450	2- 2-14		470	445	420	390	375	360	345	318	290	265	
1322	270	6-11-23												
1334	250	8- 3-23												
1339	287	10-26-23												
1340	275	9- 6-23												
Rock Pressure Totals			2778	3647	4037	4321	1182	3358	3555	3312	3159	2541	2787	3
Number of Readings			6	8	9	10	3	9	10	10	10	9	11	
Average Rock Pressure			463	456	449	432	(394)	373	356	331	(316)	282	253	

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD—CLENDENIN SAND—INJUN AREA—K

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
5 500	1901	8	4	2	16	86	51	36	46	27	53	47
7 708		24			23	40	54	122	110	73	153	126
4 553	10 5 08	30	24	11	41	99	100	46	61	56	95	86
2 626	11 19 10	36	24	10	31	108	102	57	63	48	99	77
		46	18	3	27	88	66	37	58	41	58	73
5 252	4 1 11	74	40	11	53	173	126	92	99	114	153	76
1 416	5 27 13		50	62	44	50	20	15	24	10	11	8
681	4 30 13		48	66	75	53	39	20	33	28	27	37
	Keener											
1 577	4 14 13		98	127	125	94	69	43	68	73	91	109
681	4 14 13	4	31	1	3	83	45	32	32	41	58	49
7 417	2 2 14		142	185	199	160	94	77	120	131	171	269
1 770	6 11 23											17
1 938	8 3 23											20
339	10 26 23											13
994	9 6 23											17
Production		222	479	478	637	1034	766	577	714	642	949	1024
tive Production		222	701	1179	1816	2850	3616	4193	4907	5549	6498	7522

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
9	505	8-17-04	425	425	425	395		330	320	295	268	245	220	
49	480	5-19-10	485	455	430	385		375	345	325	300	275	237	
468	415	3- 6-13	430	430	421	410		340	320	300	282	248	218	
474	490	6- 6-13		460	420	380		355	345	325	293	263	237	
475	450	8- 1-13		460	430	385		355	340	325	292	270	243	
558	460	10-18-13		460	432	395		355	345	325	295	272	247	
567	425	11-24-13		475	445	410	385	370	362	345	315	290	265	
575	475	1-31-14			445	420	397	390	375	350	328	300	277	
576	445	12- 1-15				420		393	385	360	335	300	282	
1111	325	11-21-19									295	253	225	
1282	400	1- 5-23												
1306	260	1-23-23												
Rock Pressure Totals			485	2740	3448	3600	782	3263	3137	2950	3003	2716	2451	
Number of Readings			1	6	8	9	2	9	9	9	10	10	10	
Average Rock Pressure			485	457	431	400	391	363	349	328	300	272	245	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—L

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
11 196	8-17-04	179	59	36	55	204	82	92	114	102	172	127
3 520	5-19-10	106	101	106	119	77	32	26	41	46	125	100
2 753	3-6-13	19	34	12	35	49	34	51	80	66	70	89
6 923	6-6-13		122	206	152	108	40	72	88	99	123	188
3 449	8-1-13		114	144	182	135	68	58	90	106	137	215
3 423	10-18-13		180	217	220	160	101	74	109	128	167	259
3 621	11-24-13		145	184	172	117	87	79	93	115	151	195
2 144	1-31-14		78	173	183	145	77	89	124	124	164	262
1 244	12-1-15			33	205	148	98	99	114	124	168	278
685	12-21-19								22	19	29	25
895	1-5-23											120
1 770	1-23-23											47
Production		304	833	1111	1323	1143	619	640	875	929	1306	1905
ative Production		304	1137	2248	3571	4714	5333	5973	6848	7777	9083	10988

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN & SQUAW AREA—M

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
1233	505	7-29-21	Inj. & Squaw								505	365	310	
1234	480	8-11-21	Inj. & Squaw								480	340	275	
1235	440	10-15-21	Inj.								440	395	340	
1236	490	10-1-21	Squaw								490	357	295	
1237	480	12-22-21	Squaw										355	
1238	465	1-5-22	Inj. & Squaw										350	
1280	410	10-8-22											275	
1281	410	4-9-23	Inj. & Squaw											
Rock Pressure Totals											1915	1457	2200	
Number of Readings											4	4	7	
Average Rock Pressure											479	364	314	

ANNUAL PRODUCTION

(Millions Cubic Feet)

D—CLENDENIN SAND—INJUN & SQUAW AREA—M

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
3 480	7-29-21									27	135	143
1 900	8-11-21									38	146	104
284	10-15-21									28	114	79
4 553	10-1-21									33	120	135
1 675	12-22-21										111	107
798	1-5-22										126	107
1 186	10-8-22										13	76
1 380	4-9-23											43
duction										126	765	794
ve Production										126	891	1685

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—M

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
859	510	1-15-17					525	500	485	480	470	*440	420
885	510	4-10-17					510	505	490	490	480	*460	450
		Injun and Big Lime											
1075	500	10-31-19							(500)	(528)	(531)		430
1328	430	12- 7-23											
Rock Pressure Totals							1035	1005	975	970	950	900	1300
Number of Readings							2	2	2	2	2	2	3
Average Rock Pressure							518	503	488	485	475	450	433

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—MM

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
	2 500	1-15-17					103	80	109	84	65	96	165
	700	4-10-17					51	57	75	62	49	58	107
		Injun & Big Lime											
	361	10-31-19										13	54
	560	12-7-23											
Production							154	137	184	146	114	167	326
lative Production							154	291	475	621	735	902	1228

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—N

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
155	525	8-15-10	520	520	(505)	505		430	410	395	385	335	315	
172	490	10-5-10	525	(505)	505	500		390	345	337	(370)	300	285	
217	510	11-15-09	(508)	485	460	453	415	389	372	350	258	270	275	
218	545	10-18-09	530	525	515	515		450	420	415	390	355	330	
238		12-4-09	518	495	493	478		400	375	340	320	285	258	
261	400	2-18-11	525	525	515	(515)		(440)	440	420	405	367	345	
262	520	3-21-11	530	525	515	505		430	410	395	380	(305)	285	
557	445	10-31-13		500	492	475	450	(394)	400	390	342	340	307	
578	490	2-28-14			520	493	460	445	425	415	395	355	330	
638	500	11-8-14			488	482	450	407	390	350	335	310	260	
657	485	11-24-14			498	495	448	430	415	400	390	320	300	
659	495	1-21-15			520	515		(392)	390	365	359	325	275	
669	495	3-23-15			(499)	493		414	390	345	327	305	275	
672	500	8-14-15				513		437	417	390	375	335	300	
673	500	5-27-15 Inj & Kreener			(517)	515		427	410	360	(360)	315	275	
747	480	4-6-16					450	440	410	380	368	340	320	
756	525	3-7-16				(524)	514	484	482		435	405	375	
1042	425	3-23-19							435	400	370	320	300	
1058	430	7-7-19							430	425	390	360	340	
1212	375	6-1-23												
1308	305	3-19-23 Salt												
1309	360	3-4-23												
1326	275	10-14-23												
1352	385	11-5-23												
Rock Pressure Totals			2630	2595	5521	6937	3187	5973	7766	6872	6224	5942	5750	62
Number of Readings			5	5	11	14	7	14	19	18	17	18	19	
Average Rock Pressure			526	519	502	496	(455)	427	409	382	(366)	330	303	2

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—N

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
3 547	8-15-10	12	15	9	7	171	94	110	90	67	86	133
4 038	10-5-10	23	11	10	17	161	116	96	67	45	101	88
431	11-15-09			2	8	13	79	17	16	18	17	9
1 800	10-18-09	12	5	3	23	95	44	48	37	28	44	41
1 389	12-4-09			6	19	130	62	58	67	63	88	41
1 784	2-18-11	11	6	4		154	72	63	47	41	52	76
4 917	3-21-11	15	7	7	13	137	69	83	74	51	89	101
188	10-31-13		36	39	37	40	18	17	24	20	26	35
1 724	2-28-14		62	176	172	144	72	59	61	61	100	132
740	11-8-14			3	4	86	65	31	53	49	64	40
2 616	11-24-14			6	26	148	82	87	95	60	104	131
1 577	1-21-15			6	11	140	87	82	50	45	56	70
451	3-23-15				12	78	45	28	39	35	53	19
2 382	8-14-15				12	13	72	86	89	77	104	60
1 952	5-27-15				21	96	55	43	64	55	71	49
	(Inj & Keener)											
550	4-6-16					91	65	50	56	48	70	37
554	3-7-16					28	50	50	67	45	82	50
1 400	3-23-19							28	49	46	83	95
1 119	7-7-19							5	19	8	20	25
513	6-1-23											19
302	3-19-23	(Salt)										7
1 187	3-4-23											77
116	10-14-23											2
1 185	11-5-23											
Production		73	142	271	382	1725	1147	1041	1064	862	1310	1337
ative Production		73	215	486	868	2593	3740	4781	5845	6707	8017	9354

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—O (Sheet No. 1)

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
6	380	3-30-03		407	414	397		307	300	277		227	190
32	500	1-11-06	410	420	418	404		310	304	292	266	260	205
40	420K	5-4-07											
	5001	9-27-12	460	405	420	403		308	301	285		230	192
114	525	10-16-12		405	414	399	330	308	307	272		224	185
115	525	1909	404	390	393	375	335	308	300	280		222	195
154	490	11-27-11	395	398	395	400	366	310	317	297		230	220
164	475	12-30-10		405	408	398		308	293	273		215	180
202	500	11-1-10	405	408	419	405	365	303	298	278	237	230	203
227	510	12-14-09	427	426	424	415	380	315	304	285	250	230	205
231	480	2-15-10	425		422	396		305	306	273		210	180
233	490	2-28-10			386		350	308	309	275	249	221	182
335	460	7-15-11	402	405	425	400	355	304	300	285		222	200
604	450	8-11-14			440	434	405	323	310	290	248	185	156
612	420	8-23-14			427	399	327	306	308	273		210	180
637	445	10-15-14			435	429		333	338	290	260	255	215
665	440				437	419	404	326	313		252	224	190
676	415	6-6-15			420	400		313	304	273		220	182
693	430	8-17-15			428	417	365	326	310	280	252	222	200
716	425	9-26-15			430	395	335	310	309	277		221	190
721	425	11-15-15				403	356	318	310	285	240	180	200
725	440	1-7-16				420	358	316	319	275	257	225	197
807	425	7-28-16				419		310	300		257	248	205
808	420	1-10-17					385	333	325	297	255	255	215
809	385	10-26-16				385	345	325	304	282	250	230	195
856	375	12-4-16					309	300	300	273		212	180
857	385	1-20-17					360	312	308	282		220	182
858	300	12-20-16					300	286	251	247	208	160	180
898	460	5-7-17						311	294	280		220	205
951	362	6-21-17					354	300	292	273		225	185
983	345	8-9-17					345		301	273		220	183
1006	337	10-3-17					337	300	301	278		227	189
1109	300	4-13-20								295		230	205
1110	270	2-27-20								270		230	175
1242	260	2-7-22											195

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD—CLENDENIN SAND—INJUN AREA—O (Sheet No. 1)

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
8 618	3-30-03	151	38	12	56	74	52	65	58	51	81	45
11 145	1-11-06	65	37	70	79	146	150	80	98	100	158	126
8 495	9-27-12	136	32	16	49	48	18	18	39	46	53	32
9 293	10-16-12	235	54	27	88	86	103	87	41	48	64	44
6 000	1909	23	19	30	50	69	49	64	34	42	36	30
3 297	11-27-11	86	10	3	29	59	51	37	37	36	34	31
9 293	12-30-10	218	55	28	84	102	53	50	60	65	76	33
12 500	11-1-10	105	16	9	59	41	44	31	45	40	38	25
4 666	12-14-09	21	29	4		56	51	42	42	24	25	22
12 449	2-15-10	102	32	19	74	53	37	34	30	35	48	34
20 113	2-26-10	468	324	65	550	77	105	58	61	51	55	31
4 152	7-15-11	30		27	80	97	53	42	46	62	20	20
1 770	8-11-14			3	4	77	30	24	19	34	11	14
12 280	8-22-14		87	28	130	72	59	63	78	60	80	54
659	10-15-14			34		40	23	26	28	24	30	25
4 553				146	65	102	47	37	50	46	53	40
1 592	6-6-15			16	26	41	36	26	32	21	32	16
2 602	8-17-15				19	73	35	30	43	26	38	25
11 272	9-26-15			19	124	90	71	53	65	73	70	63
3 611	11-15-15				11	10	6	2	2	1	4	8
5 250	1-7-16				25	78	53	45	32	25	50	16
5 783	7-28-16				10	126	84	69	65	53	55	44
829	1-10-17					35	41	40	50	26	32	21
3 750	10-26-16				9	42	39	27	40	25	31	23
10 982	12-4-16					61	31	39	31	26	39	27
5 857	1-20-17					55	57	41	54	22	26	30
223	12-20-16					(4)						
5 252	5-7-17					12	36	27	34	37	38	17
3 706	6-21-17					14	55	25	34	43	42	28
4 553	8-9-17					23	55	50	46	63	74	45
5 253	10-3-17					19	88	49	57	63	70	43
884	4-13-20								34	43	40	27
3 960	2-27-20								24	27	25	17
1 800	2-7-22										43	43

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—O (Sheet No. 2

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1247	216	3-20-22											183
1283	215	11-12-22											191
1287	195	12-9-22											167
1310	190	2-23-23											
1335	215	9-22-23											
1347	210	7-22-23											
Rock Pressure Totals			460	420	6286	8483	7157	6602	8847	8418	3273	6410	710
Number of Readings			1	1	15	21	20	21	29	30	13	29	37
Average Rock Pressure			460	420	419	404	358	314	305	281	252	221	192

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—O (Sheet No. 2)

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
26	1 770	3 20 22										18	31
29	4 818	11 12 22										9	44
25	4 818	12 9 22										5	31
10	2 166	2 23 23											26
15	1 361	9 22 23											19
26	3 536	7 22 23											8
Production			1640	683	556	1571	1878	1612	1281	1409	1338	1603	1258
ulative Production			1640	2323	2879	4450	6328	7940	9221	10630	11968	13571	14829

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—P (Sheet No. 1)

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
1	500	1899	416	447		416	298	318	353	300	306	260	225	2
2		Abd. 6-1907												
3	500	3- 7-01	460	463	455	449		365	377	330	350	310	290	2
4	500	1902	431	430	415	414		320	353	315	313	287	255	2
11	505	5- 5-05	429	437	425	415		373	340	315	321	285	255	2
12	498	10-11-05	421	415	407	405	380	370	343	320	302	285	245	2
13	480	11-11-05	431	427	415	405		360	350	300	280	262	235	2
15	510	4-15-06	434	435	420	411		362	363	320	318	265	265	2
34	500	12-15-06	428	410	419	419		369	344	315	315	265	260	2
38		3-17-07		390	408	421		365	340	310		262	235	2
47			450	440	436	423		353			302	270	250	2
52	505	1-31-09	441	440	430	422	390	370	350	305	297	272	235	2
119	510	3- 2-09	475	460	440	440		368	340	320	310	280	230	2
120	350	8-28-09	410	415	407	384				300	308	270	265	2
137	505	3-30-10	440	430	424		333	370	350	305	297	275	235	2
153	510	7- 8-10		395	400	406		340	325	300		255	215	2
162	440	7-23-10	432	428	416	412	350	360	348	290	287	260	235	2
163	470	2- 3-11	432	427	414	410		360	340	285	287	260	230	2
214	510	2- 7-09	446	437	449	439		366		330	326	270	230	2
219	490	11-12-09	456	447	431	425		398	360	325	320	290	210	2
220	410	12-25-09	490	450	440	428		371	350	325	310	220	172	1
228	485		481	467	458	453		360	337		297	255	200	1
259	465	2- 4-11	424	425	413	405		360	348	300	290	272	235	1
264	500	12-24-10	478	467	452	445		383	344	300	270	264	265	1
328	Abd. 7	22-11												
448	370	12-21-12	428	415	395	397	375	368	358	310	310	280	275	2
581	440	1-12-14		458	438	436		386	353	300	276	245	230	1
582	420	11-24-13	410	414	403	388	360			315	310	280	264	2
589	370	11- 8-13		410	395	397		360	334	315	303	280	245	2
603	470				460	452		363	337		300	215	195	2
624	440	9-21-14		440	389	377		330	310	290		250	225	1
677	420	6-17-15			422	410		359		300	301	265	255	2
737	420	12-11-15				425		363		300	306	265	245	2
848	400	12- 9-16						357		295	298	260	247	2

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—P (Sheet No. 1)

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	2 365	1899	6	6		3	30	3	6	8	4	5	4
2		Abd. 6 1907											
3	4 553	3 7 01	16	8	5	5	44	23	21	21	7	9	11
4	5 500	1902	26	161	5	6	58	40	26	24	8	8	11
5	6 864	5 5 05	45	31	10	9	149	91	59	53	21	32	27
6	4 187	10 11 05	46	45	18	14	100	57	48	50	34	66	47
7	7 250	11 11 05	64	19	4	2	81	61	35	23	13	6	7
8	1 525	4 15 06	11	5	11	5	42	26	19	16	7	10	10
9	1 563	12 15 06	26	13	2	11	55	35	21	32	21	27	20
10	7 470	3 17 07	73	7		28	158	129	82	106	112	118	89
11	1 750		45	18	9	47	53	63	53	42	32	51	50
12	4 123	1 31 09	21	15	5	21	80	62	36	31	19	25	19
13	3 800	3 2 09	15	1	23	4	54	37	28	24	10	16	10
14	4 000	8 28 09	206		6	44	62	79	62	44	35	62	46
15	5 550	3 30 10	38	31	10	24	136	93	69	58	34	53	39
16	1 380	7 8 10	73	58	2	13	40	31	25	25	29	27	22
17	4 039	7 23 10	25	24	5	21	102	55	30	28	24	18	18
18	3 214	2 3 11	21	26	5	16	79	44	26	25	15	16	14
24	431	2 7 09	26	3	8	5	66	54	46	40	23	39	36
25	4 553	11 12 09	14	20	7	15	63	37	25	19	21	20	9
3	480	1 25 09			1	3	17	9	9	6	4	5	4
27			8	17	6	15	68	25	28	19	14	25	36
28	6 357	2 4 11	85	23	5	7	127	93	45	42	19	24	20
34	14 962	12 24 10	139	63	20	94	313	22	96	147	96	169	118
37		Abd. 7 22 11											
46	1 040	12 21 12	4	10	3	18	49	38	18	15	13	17	12
47	8 868	1 12 14			12	56	216	77	68	116	72	117	81
48	5 783	11 24 13				1	60	77	58	61	38	72	47
49	4 758	11 8 13		34	29	24	137	90	65	64	66	90	81
50	1 889				3	9	48	18	18	17	9	14	9
51	1 456	9 21 14		12	7	57	43	46	35	28	30	20	25
52	2 251	6 17 15			5	28	78	95	57	50	32	52	51
53	2 133	12 11 15				3	50	58	31	30	38	68	52
54	5 956	12 9 16					110	97	97	75	43	100	79

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—P (Sheet No. 2

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
850		5- 7-17						360		295	(296)	265	246
962	365	8-17-17					365	347	333	295		250	220
1017	360	12-20-17						360	348	300	290	262	230
1112	290	6-25-21									290	268	240
1173	340	9-20-20								340	315	290	255
1207	265	7-15-23											
1231	290	9-15-21									290	280	240
1269	290	7- 4-22											252
1270	402	7- 9-22											345
1272	250	7-22-22											
1289	245	10-20-22											220
1290	270	11-19-22											258
1300	225	2- 6-23											
1315	285	5-24-23											
1343	225	8- 4-23											
1349	260	9- 1-23											
Rock Pressure Totals			7104	8283	9781	9513	1870	11276	8596	10165	4102	9619	10159
Number of Readings			16	19	23	33	5	31	25	33	14	36	42
Average Rock Pressure			444	436	425	414	374	364	344	308	293	267	242

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—P (Sheet No. 2)

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	5 572	5- 7 17					81	126	104	88	58	107	82
2	1 109	8 17 17					15	40	24	34	40	36	23
3	4 553	12 20 17						85	20	37	20	28	24
4	1 186	6 25 21									15	55	26
5	580	9 20 20								7	34	50	39
6	1 400	7 15 23											7
7	339	9-15 21									4	25	12
8	600	7- 4 22										10	31
9	1 243	7- 9 23										4	11
10	735	7 22 22										9	12
11	1 628	10 20 22										17	66
12	3 000	11 19 22										8	72
13	1 069	2- 6 23											14
14	2 236	5 24 23											10
15	1 938	8- 4 23											7
16	285	9- 1 23											10
Annual Production			1033	650	226	608	2864	2016	1490	1505	1114	1730	1550
Cumulative Production			1033	1683	1909	2517	5381	7397	8887	10392	11506	13236	14786

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—Q

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
287	375	9 18 10	422	397	365			340		297	(295)	265	250	2
307	500	1 26 11	393	(317)	355			340		300	(303)	270	249	2
309	450	2 4 11	421	(350)	380			350		310	(312)	270	264	2
311	440	3 6 11	405	(313)	345			325		285	271	250	235	2
348	450	10 7 11	369	(326)	327			310		270	266	230	220	2
352	445	10 17 11	370	(323)	331			305		275	245	(175)	185	2
421	385	4 3 12	(376)	354	335			310		273	265	245	232	2
Rock Pressure Totals			2380	751	2438			2280		2010	1047	1530	1635	15
Number of Readings			6	2	7			7		7	4	6	7	
Average Rock Pressure			397	376	(348)			326		287	(262)	255	234	2

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—Q

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
2 500	9-18-10	54	15	14		26	25	31	34	20	38	23
1 420	1-26-11	54	15	23	20	11	18	17	14	10	19	17
3 706	2-4-11	80	55	68	145	43	99	68	53	40	77	53
1 946	3-6-11	165	97	46	59	16	24	27	27	11	24	16
1 946	10-7-11	53	68	49	36	6	20	32	19	18	28	25
1 704	10-17-11	94	15	23	33	25	15	16	11	6	14	7
1 591	4-3-12		70	27	33	2	12	12	12	6	17	19
Production		500	335	250	326	129	213	203	170	111	217	160
ative Production		500	835	1085	1411	1540	1753	1956	2126	2237	2454	2614

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—R

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
239	410	11- 8-09	460	435	445	445		375		350	350	300	220	
243		12- 3-09	458	448	465	465		385		360	341	275	250	
269	420	2-27-11	444	440	425	434	365	343		340	321	275	225	
292		10-24-10	322	235	167	145	157	225	225	223	227	210	190	
564	485	11- 3-13		495	480	470	400	428	394	340	331	290	265	
605	470	8-31-14			463	456	410	415	365	330	320	288	270	
640	410	10-22-14				474	435	400	355	327	343	295	240	
		Inj B L												
743	425	2- 3-16				435	420	380		320	318	270	235	
751	475	2-23-16				486	460			350	370	315	300	
757	460	4- 7-16				478	443	410	395	332	346	300	280	
997	400	10- 6-17					470	400		355	366	325	305	
1196	350	5- 3-21												
1220	340	4- 8-21											269	
1223	400	8-23-21									400	338	350	
1313	295	2- 5-23												
1331	225	7- 8-23												
Rock Pressure Totals			1362		943	3222	1758	3193	1509	3077	1428	2721	3399	3
Number of Readings			3		2	7	4	8	4	9	4	9	13	
Average Rock Pressure			454		472	460	440	399	377	342	357	302	261	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—R

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1 360	11- 8-09	52	4	2	2	68	61	48	35	47	63	79
1 108	12- 3-09	56	7	3	3	48	45	30	26	26	30	45
877	2-27-11	60	1	1	1	9	18	13	7	16	33	23
4 917	10-24-10	2	5	13						2	27	38
275	11- 3-13			5	17	44	20	23	43	18	43	15
2 339	8-31-14			9		210	91	93	143	113	186	150
1 243	10-22-14				5	112	154	82	80	33	52	46
	Inj & B.L.											
1 861	2- 3-16				42	87	86	78	51	35	66	54
1 008	2-23-16				4	85	90	70	54	39	71	82
3 706	4- 7-16				6	123	112	92	71	48	98	95
800	10- 6-17						54	48	35	32	47	40
7 097	5- 3-23											21
1 300	4- 8-21										23	51
300	8-23-21									1	41	17
962	2- 5-23											55
2 140	7- 8-23											10
Production		170	17	33	80	786	731	577	545	410	780	821
ative Production		170	187	220	300	1086	1817	2394	2939	3349	4129	4950

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—S

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1
210	(380)	11 21 06	450	448	435	431		355	313	285	243	228	190	
237	495	12 4 09	467	445	441	432		363	309	283	254	240	205	
240	465	12 16 09	457	420	405	389		313	280	310	290	275	275	
		(10 15 12)												
270	400	4 7 11		274	187	208	280	234	245	218	265	208	200	
402	505	3 16 12				431	430	430	427	413	400	380	265	
566	450	11 10 13		450	441	429		328	313	275	238	221	190	
639	450	10 24 14			438	432	340	348	304	275	238	220	195	
660	455	2 17 15			465	457		345	346	310	295	265	235	
694	415	12 8 15				426		365		325	303	253	250	
695	400	2 4 16				400	405		360	325	310	240	250	
713	440	10 1 15			440	440		360		322	293	240	255	
			Keener & Injun											
845	405	12 5 16						353	306	277	235	220	192	
874	395	4 2 17					395	372	300	290	252	240	210	
875	370	2 20 17					370	362	306	278	243	230	200	
881	330	10 28 17						339	304	279	241	220	180	
882	330	6 2 17					330	321	304	275	240	215	200	
883	380	4 4 17					350	353	313	285	244	228	190	
1271	285	9 28 22											190	
1301	225	12 18 22											205	
1312	210	4 3 23												
Rock Pressure Totals			917	1763	3865	3436	1805	4364	3072	4069	3699	3055	4077	3
Number of Readings			2	4	7	8	5	13	10	14	14	13	19	
Average Rock Pressure			459	441	438	430	361	351	307	291	258	235	215	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—S

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1 947	11-21-06	220	45	18	40	151	110	65	92	60	88	38
4 818	12-4-09	181	44	12	87	154	101	52	63	46	88	46
1 299	12-16-09		2	1	1	16	9	27	16	21	48	41
3 706	4-7-11		1	19						4	21	31
2 087	3-16-12										34	77
5 572	11-10-13		14	4	26	79	52	20	26	20	26	13
7 365	10-24-14			11	37	84	50	33	47	40	43	31
2 616	2-17-15			3	7	58	65	27	33	30	37	25
2 753	12-8-15				3	62	50	38	16	34	40	39
1 040	2-4-16				2	33	36	29	20	26	32	32
721	10-1-15	Keener & Inj.			7	47	40	32	22	27	29	29
10 413	12-5-16				3	102	52	44	49	37	48	31
2 000	4-2-17					53	45	57	42	30	42	33
3 350	2-20-17					50	44	27	33	20	27	21
8 000	10-28-17					18	56	34	51	32	65	41
2 000	6-2-17					16	31	26	35	17	34	22
5 597	4-4-17					103	90	61	90	46	93	49
7 194	9-28-22										26	44
1 770	12-18-22											54
2 166	4-3-23											25
Production		401	106	68	213	1026	831	572	635	490	821	722
ative Production		401	507	575	788	1814	2645	3217	3852	4342	5163	5885

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—T Sheet No. 1

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
279	530	6-28-10	526	530	523	518	480	465		390	425	365	360
282	525	1-24-10	492	502	503	499			420			375	345
296	460	5-22-12	470	460	457	419		410	398	380	425	325	255
		8-8-10											
297		8-9-10	498	499	501	503		475		410	329	320	250
308	440	2-6-11	536	531	503	483		400	378	340	400	300	295
310	400	2-2-11	411	460	466	442	390	400		310	351	295	210
362		1-26-11	475	475	451	388					388	332	290
378	500	4-19-15	543	543	535	530		450		400	432	375	345
386	465	4-3-12	429	403	349	325	330		405		324	295	265
399	420	5-8-12	424	379	336	309	Abd.	1-23	1919				
471		11-18-12	450	410	359	335	335	345	320	305	424	310	275
482	500	10-9-15				515					430	400	390
504	440	4-19-13			526	519	510	470	415	385	405	365	360
527	445	3-13-13	501	497	496	492		440		400	409	365	350
598	480	5-23-14		489	452	386		335	305	285	350	275	205
615	465	6-3-14		483	491	490		478	390	350	418	280	320
641	508	10-14-14			491	486	425			330	400	300	245
642	495	11-16-14				475		440		370	346	235	265
701	505	8-20-15				501		475	400	375	427	380	350
897	460	3-25-17					511	500			425	415	395
904	490	2-26-17					489	471	455	427	418		325
932	435	6-7-17					505	525	440	390	418	345	334
1045	480	11-28-18							498	395	419	320	272
1100	400	8-7-20								412	411	230	190
1101	400	4-28-20								424	475	295	250
1152	340	1-5-21	Inj. & Keener								343	295	275
1170	480	7-7-20									500	350	285
1172	415	1-20-21									436	265	265
1178	395	3-17-21									395	325	265
1221	400	3-3-21									400		340
1222	450	3-19-21									460	380	290
1224	400	6-20-21	Big Lime								400	250	195
1225	405	9-22-21									415	320	265

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD CLENDENIN SAND INJUN AREA T (Sheet No. 1)

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
999	6 28 10	13	1	3	2	34	47	35	35	15	45	61
100	1 24 10	8	1	2	3	20	13	15	20	26	35	32
201	5 22 12											
	8 8 10	35	...	2	6	12	7	11	8	6	14	16
284	8 9 10	13	1		1	15	15	12	10	8	16	19
1 225	2 6 11	60	1	3	1	45	61	51	50	34	50	47
600	2 2 11					18	33	27	35	16	30	31
1 375	1 26 11			7	13	6	4	9	7	35	74	80
405	4 19 13			5	3	141	133	96	156	55	106	107
1 404	4 3 12	25	10	10	11	9	12	19	14	43	18	27
1 531	5 8 12	56	20	17	24	34	1	Abd.	1 23	19		
1 759	11 18 12	33	13	32	15	18	41	32	40	23	43	44
910	10 9 15				1	42	42	39	43	38	97	97
431	4 19 13					6	19	18	15	14	39	32
1 666	3 13 13		8	6	2	179	200	143	120	117	201	137
431	5 23 14				13	14	17	16	10	7	16	12
500	6 3 14			2	1	2	16	34	26	19	36	25
527	10 14 14			1	1	26	25	31	26	17	24	19
1 054	11 16 14				1	58	53	25	19	13	22	32
2 626	8 20 15				5	61	58	61	51	37	62	72
554	3 25 17					7	55	57	48	35	67	72
393	2 26 17										17	31
1 667	6 7 17							82	85	50	108	91
3 500	11 28 18							6	15	50	81	59
1 488	8 7 20								4	9	32	11
2 000	4 28 20								4	35	56	39
K 525	Inj & Keener											
1 722	1 5 21									106	62	39
1 784	7 7 20									10	66	35
500	1 20 21									10	48	24
1 471	3 17 21									26	102	48
400	3 3 21										18	42
1 150	3 19 21									12	111	63
2 400	6 20 21	(Big	Lime)							15	25	21
2 900	9 22 21									14	83	54

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—T Sheet No.

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1228	335	5-16-21	(Inj. & B. L.)								335	280	240
1318	430	6-26-23											
1348	375	11-30-23											
1354	300	9-20-23											
Rock Pressure Totals			3774	3685	3616	4625	2261	5260	4369	6061	4559	9047	9561
Number of Readings			8	8	8	10	5	12	11	16	12	28	33
Average Rock Pressure			472	461	452	463	452	438	397	379	380	323	290

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—T Sheet No 2

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
L	200	Inj. & B. L.											
Inj.	1.043	5-16-21									13	45	39
	304	6-26-23											7
	116	11-30-23											2
	075	9-20-23	(Inj. & B. L.)										1
Production			243	55	90	103	747	852	819	841	908	1849	1568
ative Production			243	298	388	491	1238	2090	2909	3750	4658	6507	8075

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—W

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
123	480	Squaw 7-23-09	370		372	358		285	263	258		243	259
284	475	8-1-13	475		365	341			280			260	259
340	480	Squaw 1-26-11	332		370	372	314			276		345	282
1248	400											262	253
1249												268	259
1250												255	248
1251		3-14-12										248	244
1252		4-13-12										238	233
1253		7-17-12	Purchased		from	Navajo	Oil &	Gas Co		12	21	276	269
1254												303	254
1255												265	261
1256												246	201
1257		2-9-15										258	253
1258		8-5-15										253	255
1259		10-25-16										286	253
Rock Pressure Totals					1107	699	314	285	543	534		3681	3783
Number of Readings					3	2	1	1	2	2		14	15
Average Rock Pressure			*430		369	350	314	285	272	267		263	252

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—W

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1 440	7 23 09	222	122	127	109	68	60	38	34	20	15	27
4 771	8 1 13	66	226	229	131	105	131	97	54	44	36	59
877	1 26 11	93	57	40	27	16	27	18	17	11	8	19
										7	18	35
										5	15	22
										2	12	24
	3 14 12									2	13	22
	4 15 12									1	6	10
	7 17 12	Purchased from Navajo Oil & Gas Co.								3	14	24
							12	9 21				
										3	13	16
										3	17	34
											21	31
	2 9 15									5	18	32
	8 5 15									3	13	28
	10 25 16									4	19	34
Produc	on July	726	703	719	733	734	584	514	427	211		
Wells												
duction		1107	1108	1115	1000	923	802	667	532	324	238	417
ive Production		1107	2215	3330	4330	5253	6055	6722	7254	7578	7816	8233

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIEOD—CLENDENIN SAND—WEIR AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
		B.L. & Weir											
442	290	1- 7 13		170	150				99	85		60	51
		B.L. & Weir											
453	325	4- 2 13		170	150		Abandoned 8		9	18			
		B.L. & Weir											
779	135	9-10-12				140	160		85	74		55	45
780		9-28-12					Abandoned 8		2	17			
781	118	11-25-12				305	Abandoned 8		3	17			
782	145	10-20-13				145			84	69		42	40
		2-28-13											
Rock Pressure Totals				340	300	285			268	228		157	136
Number of Readings				2	2	2			3	3		3	3
Average Rock Pressure				170	150	143			89	76		52	45

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—WEIR AREA—X

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
B.L. 5.250	B.L. & Weir											
W2 323	1- 7-13	68	49	67	31	32	18	33	27	30	45	32
	B.L. & Weir											
4 535	4- 2-13	71	54	99	52	34	2	Abandoned 8-19-18				
B.L. 248	B.L. & Weir											
W1 300	9-10-12				35	29	16	31	46	62	72	64
1 000	9-28-12				2	Abandoned 8-12-17						
067	11-25-12				34	61	Abandoned 8-3-17					
248	10-30-16											
094	2-28-13				12	15	6	12	12	12	12	13
Production		139	103	166	166	171	42	76	85	104	129	109
ative Production		139	242	408	574	745	787	863	948	1052	1181	1290

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—SQUAW AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	192
400	480	8- 1-12	260		180	130	160	152	115	100	85	38	D
401	530	8-17-12	260		203	150			88	60	79	*72	6
427	530	10-10-12	260		200		170		98	81	91		
428	360	11-30-12			208				Abd.	1-15	18		
443	310	12-24-12	350	285	407	Abd.	9-15	15					
750	140	2-23-16	B.L.	Sq.	Wea	140			90	82		*74	6
785	160	1- 6-16				144			85	69		50	4
Rock Pressure Totals			780		791	434			476	332		234	17
Number of Readings			3		4	3			5	4		4	
Average Rock Pressure			260		198	145			95	83		59	5

*Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—SQUAW AREA—Y

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
11 712	8 1 12	78	18	46	31	65	31	21	45	36	30	
8 862	8 17 12	62	21	25	31	17	15	30	31	16	63	86
1 420	B.L.	67	30	56	44	20	23	32	31	31	34	134
10 495	Sq. 10 10 12											
5 252	11 30 12	151	81	122	72	22	Abd.	1 15	18			
115	B.L.	5	4	2	Abd.	9 15	15					
067	Sq. 12 24 12											
3 216	2 23 16				40	27	20	15	12	8	10	10
3 200	1 6 16				12	29	30	42	33	50	55	53
Production		363	154	251	230	180	119	140	152	141	192	283
ative Production		363	517	768	998	1178	1297	1437	1589	1730	1922	2205

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—WEIR AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
		Injun											
274	400	10-20-10	475		290			180	140	123		105	85
472	475	11-19-12	412		220			116	100	105		*65	54
526	350	3-21-13	343		(208)	(173)	(145)	(145)	(132)		(99)	82	80
783	190	10-6-12											
		10-31-15				220	(215)	195	148	128		*122	118
		B.L.& Weir											
784	282	1-9-15				245		*215	*200	*180		150	*105
		11-1-15											
832	485	Injun											
		7-20-16						185	115	83		*72	68
839	480	8-9-16				480		185	150	130		110	105
864	260	10-27-16				260		(250)	130	102		73	D.O.
Rock Pressure Totals			755		510	725		1076	983	851		779	615
Number of Readings			2		2	3		6	7	7		8	7
Average Rock Pressure			378		255	242		179	141	122		97	88

*Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD—CLENDENIN SAND—WEIR AREA—Z

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
	Injun											
1 832	10 20 10	56	183	127	61	31	27	27	15	5	25	19
2 818	11 19 12	109	303	110	60	28	19	20	19	22	21	34
1 056	3 21 13		22					1	7	1	1	2
884	10 6 12											
	10 31 15				30	45	10	20	20	28	35	27
	B.L. & Weir											
1 240	1 9 13				56	107	89	113	93	64	28	20
	11 1 15											
	Injun											
1 420	7 20 16				5	40	18	19	12	12	12	13
1 592	8 9 16				19	39	33	48	41	45	53	43
1 050	10 27 16				14	52	46	49	37	33	38	12
roduction		165	508	237	245	342	242	297	244	210	213	170
ive Production		165	673	910	1155	1497	1739	2036	2280	2490	2703	2873

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	192
1		3-7-17										30	
2	405	1-12-17					405					30	
3	430	12-30-16					430			Oil			
5	380	4-13-17					380					30	
20	305	11-18-18						305				30	
21		11-8-18										30	
22		11-22-18										30	
23		11-16-18										30	
24		6-15-19										30	
34	45	10-25-19										30	
Rock Pressure Totals							1215	305				270	
Number of Readings							3	1				9	
Average Rock Pressure							405	305				30	

NOTE: These wells are all Cabin Creek Gas Company Wells

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD—KANAWHA SAND—WEIR AREA—A

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
8 277	3 7 17					117	123	51	34	21	12	9
12 381	1 12 17					145	53	55	28	21	12	9
5 572	12 30 16					84	95	8	Oil			
8 310	4 13 17					106	142	38	28	18	10	7
2 110	11 18 18							214	70	39	20	15
	11 8 18							117		104	25	19
2 100	11 22 18							72	43	57	18	13
1 186	11 16 18							13	17	19	10	7
1 225	6 15 19								41	31	15	11
260	10 25 19									34	15	11
roduction						452	413	568	261	344	137	101
ive Production						452	865	1433	1694	2038	2175	2276

TE: These wells are all Cabin Creek Gas Company Wells.

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
4	300	2-16-17					300					190	140
10	450	5-3-17					450						100
11	500	10-16-17					500					125	115
19	305	6-9-18							305				
Rock Pressure Totals							1250		305			315	355
Number of Readings							3		1			2	3
Average Rock Pressure							417		305			158	118

NOTE: These Wells are all Cabin Creek Gas Company Wells.

ANNUAL PRODUCTION

(Millions Cubic Feet)

LD—KANAWHA SAND—WEIR AREA—B

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
789	2-16-17					50	198	118	115	87	220	55
970	5-3-17					118	417	113	135	98	25	26
5 850	10-16-17					95	486	181	179	115	179	119
3 893	6-9-18							257	161	165	70	50
oduction						263	1101	669	590	465	494	250
ve Production						263	1364	2033	2623	3088	3582	3832

TE: These Wells are all Cabin Creek Gas Company Wells.

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD KANAWHA SAND WEIR AREA

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	19
7	475	5 24 17					475					275	2
9		4 8 17											
12	490	7 10 17					490					230	1
15	500	6 28 17					500				280	215	1
18	345	10 15 17						345		355		305	2
Rock Pressure Totals							1465	345			280	1025	9
Number of Readings							3	1			1	4	
Average Rock Pressure							488	345			280	256	2

*Estimated.

NOTE. These Wells are all Cabin Creek Gas Company Wells.

ANNUAL PRODUCTION

(Millions Cubic Feet)

LD—KANAWHA SAND—WEIR AREA—C

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1 500	5 24 17					47	290	223	144	80		
393	4 8 17									14	10	8
5 572	7 10 17					185	425	255	224	176	82	316
5 800	6 28 17					101	359	221	180	51	286	119
2 700	10 15 17						415	199	112	31	302	162
duction						333	1489	898	660	352	680	605
ve Production						333	1822	2720	3380	3732	4412	5017

E: These Wells are all Cabin Creek Gas Company Wells.

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
		Max &	Weir										
689	495	9- 8-15				483						60	Gd
926	460	8-14-17					460	350				60	Gd
1062		6-23-19											Gd
1063		9-25-19										60	Gd
1064		9- 4-19							203	178	Abd	2 2 21	
1065		8- 3-19										60	Gd
1070		7-23-20										60	Gd
1071		10-16-19							400			60	Gd
1130		9-14-20										60	Gd
1134		7-16-20										60	Gd
1135		9- 6-20										60	Gd
1136		10-28-20											Gd
1194		11-23-20									81	60	53
1195		1- 8-21										60	Gd
Rock Pressure Totals							460	350	203	178		660	53
Number of Readings							1	1	1	1		11	1
Average Rock Pressure							460	350	203	178		60	*50

*Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—KANAWHA SAND—WEIR AREA—D

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
		Max & Weir											
		9 8 15					162	140	98	121	81	42	36
	11 712	8 14 17					27	94	12	96	38	24	17
	903	6 23 19							12	39	36	20	16
	963	9 25 19							6	73	16	8	7
	600	9 4 19								4	Abd.	2 2 21	
	1 592	8 3 19							41	381	12	33	6
	554	7 23 20								27	20	73	10
	1 784	10 16 19							21	323	31	22	13
	1 935	9 14 20								34	133	41	61
	962	7 16 20								114	27	42	12
	1 183	9 6 20								16	54	78	24
	858	10 28 20								12	135	73	62
	2 463	11 23 20								29		12	44	
	797	1 8 21									116	59	43
Production							189	234	190	1269	699	527	351
ulative Production							189	423	613	1882	2518	3108	3459

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA—E

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
913	410	7-23-17					410	351		(155)		120	105	
925	465	8-18-17					465	388	284		171	160	125	1
927	505	6-15-17					505	396	278		196	160	150	1
928	480	9-15-17					480	356	225	(135)	(115)	150	134	1
929	460	10-24-17					460					165	140	1
944		12-14-17						(310)				110	100	
945	455	11-5-17					455	383			150	155	145	1
961	500	11-14-17					500	379	277		159	145	120	1
1013	405	5-4-18						405	268		195	172	130	1
1014	310	8-31-18						310	272		151	134	89	1
1066	122	5-23-21									(123)	(120)	90	
Rock Pressure Totals							3275	2968	1604		1022	1471	1328	1
Number of Readings							7	8	6		6	10	11	
Average Rock Pressure							468	371	267		170	147	121	1

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—KANAWHA SAND—WEIR AREA—E

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
	3 214	7 23 17					79	340	304	220	50	72	55
	25 157	8 18 17					91	172	102	245	65	32	45
	9 200	6 15 17					200	448	302	489	166	81	140
	2 700	9 15 17					215	333	316	373	308	223	142
	4 220	10 24 17					69	224	285	199	194	133	73
	5 800	12 14 17						271	268	190	170	138	97
	2 974	11 5 17					38	204	245	266	192	168	122
	11 712	11 14 17					150	562	270	435	151	107	55
	2 251	5 4 18						43	159	128	48	39	37
	6 921	8 31 18						36	248	180	69	56	44
	1 500	5 23 21										28	110
Production							842	2633	2499	2725	1413	1077	920
ative Production							842	3475	5974	8699	10112	11189	12109

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA—

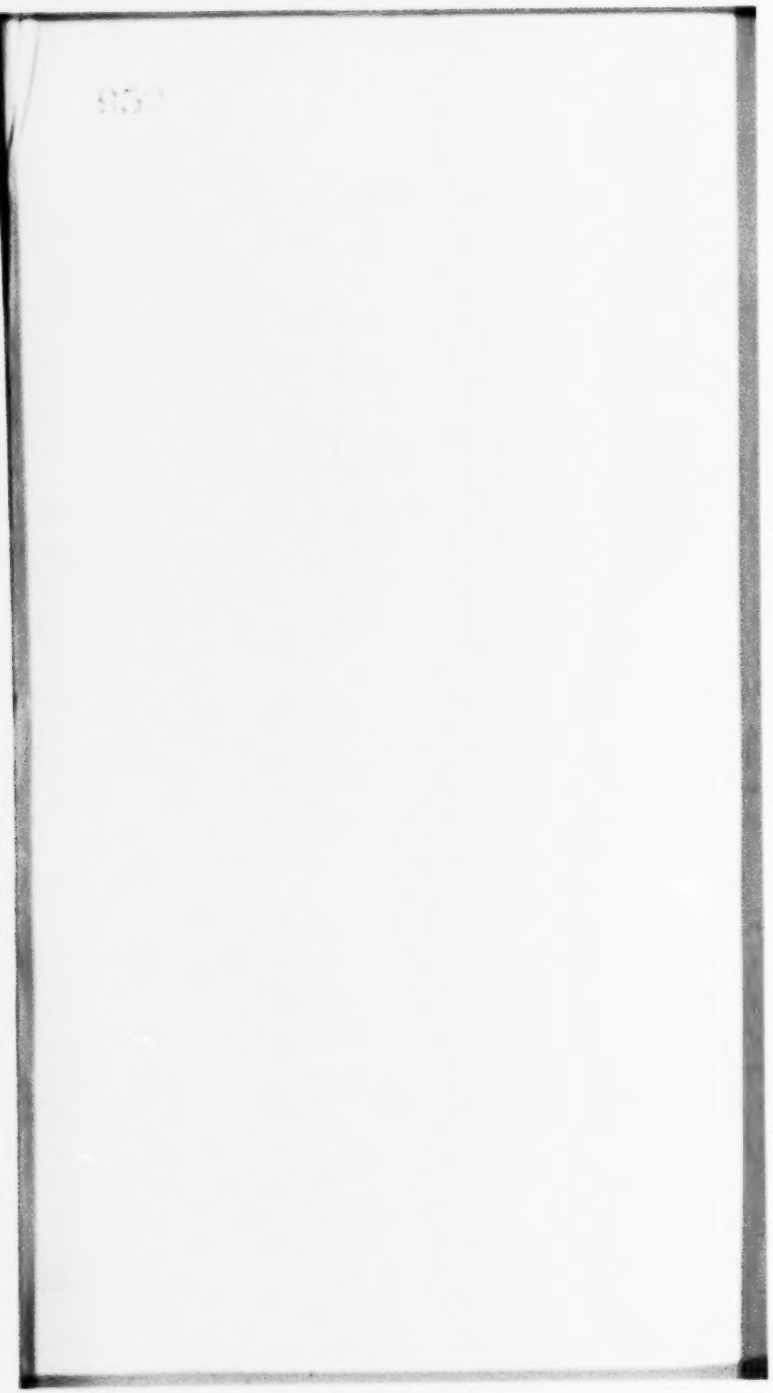
Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
775		3-22-15				(371)		341	(268)	293	249	240	208
946	460	10-4-17					460				422	392	375
960	500	10-30-17					500	391	280		227	202	
969	435	3-8-18							245		315	260	250
970	430	7-22-18						430			310	270	255
971	464	5-3-18						464	205		294	190	180
1147	337	2-12-21									337	266	255
1148	340	1-22-21									339	250	225
1156	325	3-21-21									325	225	187
1157	270	12-2-20								290		229	192
1158	415	11-30-20								408		220	170
1159	386	10-16-20								403		195	175
Rock Pressure Totals							960	1626	730	1394	2818	2939	2472
Number of Readings							2	4	3	4	9	12	11
Average Rock Pressure							480	407	(243)	348	313	245	225

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD KANAWHA SAND WEIR AREA F

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
6 19 18												
1 581	3 22 13				26	140	86	56	118	7	13	28
3 706	10 4 17					26	519	510	603	337	277	338
12 449	10 30 17					208	561	447	514	181	106	131
2 166	3 8 18						32	276	231	99	70	113
1 450	7 22 18						21	189	167	71	52	98
2 662	5 3 18						12	113	74	37	22	37
1 550	2 12 21									193	228	179
3 200	1 22 21									311	381	351
1 400	3 21 21									194	237	172
2 017	12 2 20								15	175	189	133
2 236	11 30 20								22	261	197	140
2 302	10 16 20								21	238	215	155
oduction					26	374	1231	1591	1765	2104	1987	1875
ve Production					26	400	1631	3222	4987	7091	9078	10953



MAPS 1-6
TOO
LARGE
FOR
FILMING

Vol. III

278

21

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, [redacted] 1928

No. [redacted] 4

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

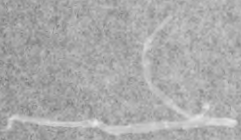
THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, ET AL.

I. Wade Carran and C.E. Nothen,

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA

FILED JUNE 1, 1928

(28,000)



(32,006)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1926

No. 439

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA

VOLUME III

INDEX

	Original	Print
Davis exhibits—Continued:		
Z—Appraisal of natural-gas property, December 31, 1923	1197	959
Meadows Exhibit No. 1—Certificate of valuation, Huntington Real Estate Board, March 7, 1924	1224	983
Goad Exhibits Nos. 1 and 2—Certificates of appraisal, Charleston Real Estate Board, March 13, 1924	1225	985
Hightower exhibits	1227	986
No. 1—Graph showing average price of gasoline, 1920-1924, inclusive (5 months of 1924)	1227	986

JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., JULY 23, 1926

J60004

	Original	Print
No. 2—Amount of gas sold to various classes of consumers and average price received therefor, 1923 and year ending April 30, 1924	1229	987
No. 1-A—Same extended to include 11 months of 1924	1228	986
No. 2-A—Gasoline earnings by months for first 10 months of 1924	1230	988
No. 3—Statement of receipts from gas sales for cities of Huntington and Charleston, by months, for year 1923, and same for year ending April 30, 1924	1231	989
No. 3-A—Statement of gas sales and expenses for year ending November 30, 1924	1233	991
No. 4—Analysis of miscellaneous income West Virginia distribution plants, year 1923	1234	992
No. 4-A—Increase in capital expenditures from December 31, 1923, to November 30, 1924	1235	992
3 J. C. 4-B—Same from December 31, 1923, to December 31, 1924	1236	994
No. 5—Total gas sales and expenses, sales and revenues from W. Va. cities, mileage of transmission lines, and total expenses	1237	996
No. 5-A—Statement of receipts from gas sales cities of Huntington and Charleston, by months, for year ending November 30, 1924	1238	998
Y—Statement showing amount of money borrowed by years since and including the year 1909	1239	1001
Z—Gasoline earnings by months for year 1924	1240	1002
Wallace exhibits	1241	1004
No. 1—Supplemental agreement between United Fuel Gas Co. and Hope Natural Gas Co., October 31, 1923	1241	1004
No. 2—Supplemental agreement between United Fuel Gas Co. and Fittsburgh & W. Va. Gas Co., November 12, 1923	1245	1007
No. 3—Amount collected as minimum charges, year 1923, in city of Charleston, W. Va.	1248	1010
No. 4—Amount of gas purchased, year 1923 and 11 months of 1924	1249	1011
Peirce Exhibit No. 1—Record of construction costs, Public Gas Corporation, two years ended April 30, 1924	1250	1012
Jay exhibits	1251	1014
3 J. C. No. 1—Statement of gas rights, title, number of acres, county, company's obligation	1251	1014
3 J. C. No. 2—Representative forms of leases	1284	1031
Jirgel exhibits	1312	1059
No. 1—Report of Arthur Anderson & Co.	1312	1059

	Original	Print
No. 2—Study of amount in net earnings available for return after depletion, depreciation, and amortization	1330	1077
No. 3—Analysis of book value of acreage	1334	1081
No. 4—Analysis of accounts of company relating to demand for gas	1369	1116
No. 5—Detailed statements supporting figures	1377	1124
No. 6—Report on adjusted gas investment and operating profit	1395	1142
No. 7—Source and application of funds, January 1, 1911, to December 31, 1923	1410	1157
No. 8—Study of gasoline earnings	1411	1158
No. 9—Gasoline gross earnings and net revenue for 12 months ending October 31, 1924	1412	1159
No. 9-A—Statement of gasoline earnings and expenses down to December 31, 1924	1413	1160
3 J. C. 1—Statement showing distribution of net earnings before and after considering delay rentals	1413a	1161
3 J. C. 2—Adjustment of parent company revenue	1413b	1162
Hagenah exhibits	1414	1163
No. 1—Analysis of inventory and appraisal of Ford, Bacon & Davis	1414	1163
No. 2—Study of Mr. Davis' appraisal of gas lands	1428	1177
No. 3—Analysis of conditions in coal industry	1445	1194
No. 4—Study of Mr. Ockelacker's appraisal of gas lands	1460	1209
No. 5—Study of proportion of gas lands presently used and useful	1467	1216
No. 6 and 6-A—Statement of distribution of net earnings available for depletion, depreciation, and return on reproduction cost less accrued depreciation and with gas valued at 5 cents in the ground	1473	1222
No. 7 and 7-A—Statement of return earned on cost of reproduction new less depreciation, with gas valued at 5 cents in the ground	1475	1224
No. 8—Study of crude petroleum and gasoline production, consumption, and stocks	1476	1225
No. 9—Statement showing apportionment of investment and expense between gas and gasoline departments and per cent available for depletion, depreciation, and return for gas department	1477	1226
No. 10—Statement showing per cent earned on various valuations made by Hagenah and others	1479	1228

	Original	Print
Opinion, Rose, J	1483	1230
Judgment	1529	1275
Petition for appeal	1531	1276
Assignments of error	1533	1276
Bond on appeal (omitted in printing)	1537	
Order allowing appeal	1540	1279
Citation and service (omitted in printing)	1541	
Order extending time	1543	1280
Stipulation re transcript of record	1544	1280
Clerk's certificate (omitted in printing)	1545	
Order extending time	1546	1281
Statement of points to be relied upon and designation by appellant of parts of the record to be printed, with proof of service	1548	1282

[fol. 1197] DAVIS EXHIBIT "Z"

United Fuel Gas Company

Appraisal of Natural Gas Property, December 31, 1923

Ralph E. Davis, Engineer, Pittsburgh, Pennsylvania

[fol. 1198] United Fuel Gas Company

Appraisal of Natural Gas Property, December 31, 1923

Property Owned

The United Fuel Gas Company and its subsidiaries the Cabin Creek Gas Company and the Warfield Natural Gas Company, owned December 31, 1923 a total of 814,910.68 acres of fee and leasehold property located in the natural gas belt of southern West Virginia and eastern Kentucky. Of this total 704,796.83 acres were located in West Virginia and 110,113.85 acres were located in Kentucky.

The three companies owned on December 31, 1923, 796.7 gas wells of which 750.7 were located in West Virginia, the remaining 46 wells being located in Kentucky.

The three companies owned a complete system of field gathering lines, compressor stations, transportation lines, distribution plants, suitable and competent for the gathering and delivery of natural gas to its various markets.

In a separate report dealing with the acreage held on December 31, 1923, the writer has shown that the territory classed as proven contains approximately 249.1 billion cubic feet of gas and that the territory classed as probable contains approximately 414.6 billion cubic feet of gas. These estimates have been made after a thorough study of all pertinent data available. The total estimated reserve, 663.7 billion cubic feet, is used in this appraisal mainly as a guide in mapping the probable future operations of the company.

Property Valued

Value is placed on that portion of the above property which would be useful and of value, assuming the com-

pany free of all present contracts and obligations for the [fol. 1199] sale and delivery of gas and free to find that market most advantageous to it.

Such portions of the property owned as have value only in their use in serving present consumers are not included in this appraisal. The true value of such property depends largely on its usefulness, and this in turn depends on whether present or new markets are to be served.

Basis of Valuation

The value of a property capable of producing natural gas is conceived to be measured by the prospective earning power of the property placed at its most advantageous use. To determine the value of such property it is necessary to consider the present use to which the property is placed and to compare this use with other uses available. If the present use is found to be most advantageous, the valuation will be dependent upon the prospective earning power of the property in its present use. If a more advantageous use be found available, it is necessary to determine if such use be competent to return a greater earning and the amount of such earning.

The basis of valuation used herein is that now commonly used in the determination of value of mineral properties. It has long been the custom of mining engineers to value a mining property on the basis of expected earnings, reduced to present worth, and calculated on estimated ore reserves both proven and probable. Scientific appraisals of mineral properties have been made for the Tax Commission of Michigan (by J. R. Finlay in 1911) and for the Tax Commission of New Mexico (by J. R. Finlay in 1922). The United States Treasury Department has for some years based depletion allowances on the estimated reserves of mineral properties, including oil and natural gas, and the depletable value, if determined by appraisal, is usually based on the prospective earnings of the property, reduced to "present worth."

History of Gas Production in Appalachian Field

In studying the value of any natural gas property located in the Appalachian Field, consideration must be

given the history of the natural gas industry in said field [fol. 1200] in order that a proper perspective of the problem may be obtained. Twenty years ago, natural gas was produced in enormous quantities as a by-product in oil production. A part of the gas so produced was brought under control and sold for manufacturing purposes, mainly at prices ranging from 3¢ to 6¢ per M cubic feet. A considerable part of the gas so produced was wasted, there being no competent market for the entire output of gas. During the past twenty years the natural gas industry of the Appalachian Field has undergone a fundamental change brought about by three principal causes:

(1) Drilling for oil is no longer prosecuted to the great extent that was formerly the case, hence the production of gas as a by-product from oil production is greatly reduced.

(2) The gas fields of the Appalachian Field have been greatly depleted of their original gas content so that today a large number of wells are required to deliver the same quantity of gas formerly delivered by a single well.

(3) With the increase in the demand for gas and the diminishing supply, it has become necessary to drill a large number of wells primarily for the purpose of producing gas. Hence the cost of gas production must be borne entirely by the consumers of gas.

With the passing of time and with the decline in the supply of natural gas, the price of gas has naturally advanced in all of its primary markets. This advance in price has long since passed the point where natural gas may be used inefficiently and without regard to its value. The supply of natural gas has decreased to the point where it is now difficult for the natural gas companies of the Appalachian Field as a whole to supply during the colder months of the year the full requirements of their domestic consumers alone and this has necessitated, during the last few years particularly, the shutting off of industrial users in most localities during cold weather. The result is that industrial plants requiring a large and constant fuel supply have been driven to the use of bituminous coal either in [fol. 1201] whole or in part. It is commonly known that at

present most of the industrial plants located in various cities in West Virginia, western Pennsylvania and eastern Ohio use coal as a primary source of heat during cold weather and use natural gas to a limited extent during other periods of the year.

A study of the prices which now obtain for natural gas delivered to industrial plants using a large quantity of gas reveals the fact that in most industrial centers in the Appalachian natural gas belt, natural gas commands a price ranging from 18¢ per M cubic feet in the territory now supplied by the United Fuel Gas Company to prices ranging from 32¢ to 60¢ and averaging not less than 40¢ per M cubic feet in the territory served by most of the natural gas companies of the Appalachian gas field.

Present Use of United Fuel Gas Company Property

The property of the United Fuel Gas Company is at present used for the production, transmission and distribution of gas to various wholesale and retail markets. Gas is supplied in wholesale quantity at Cedarville, West Virginia, to the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company; at Ravenswood, West Virginia, to The Ohio Fuel Supply Company; at Ballsgap to the Columbia Gas & Electric Company and at various other points to various purchasers. Gas is supplied to industrial users and is distributed to domestic consumers in Charleston, Huntington and some forty cities and towns in West Virginia. The total quantity of gas produced by the Company and sold in 1923 was 37,370,482 M cubic feet (*). The total additional quantity of gas purchased and resold in 1923 was 9,669,753 M cubic feet (**).

A study of the prices received by the United Fuel Gas Company for gas during 1923 from its various customers [fol. 1202] reveals the fact that the property is not at present used in the most advantageous way possible, on account of the restrictions imposed on it by various contracts and by certain decisions relating to the price of gas.

*Includes gas produced by subsidiary companies.
**Excludes gas purchased from subsidiary companies.

(1) An example of contract obligation impairing earning power is afforded in the contracts entered into in 1916 with the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company, terms of said contracts requiring the United Fuel Gas Company to delivered and the other two companies to purchase large quantities of gas delivered at Cedarville, West Virginia, under a price schedule now obsolete. Said contracts do not expire until December 31, 1926, and although various modifications of price have been made from year to year as conditions have made necessary, the fact remains that the United Fuel Gas Company is placed in a disadvantageous position in negotiating said prices. Under the terms of modified contract entered into as of August 1, 1923, the average price received for gas delivered at Cedarville has averaged for the nine months ending April 30, 1924, $0.2266 per M cubic feet.

(2) A second example of contract obligations which impair the earning power of the United Fuel Gas Company are the contracts entered into in 1909 with the then owners of the United Fuel Gas Company. These contracts stipulate a price for gas delivered in large quantities at prices averaging slightly in excess of 7¢ per M cubic feet.

(3) A third example of restriction on the price received for gas as compared to that which would obtain in a free market is found in the price stipulated to industrial users and domestic consumers in the State of West Virginia, these prices starting at 18¢ and 20¢ per M cubic feet respectively.

It is evident that where the company is able to receive in excess of 20¢ per M cubic feet for gas delivered in large quantity through a single meter, it is placed at a disadvantage in delivering small quantities of gas through a large [fol. 1203] number of meters at a lesser price. Were the law of supply and demand permitted freedom in determining either the market to which gas would flow or the prices at which it would be sold, it is evident that either the price now being received from consumers in West Virginia would be increased or the gas now supplied to said consumers would flow to markets where a higher price prevails.

Prospective Use of United Fuel Gas Company Property

1. Pittsburgh Market.

The industrial district of which Pittsburgh is the center affords an excellent opportunity for a study of the value of natural gas in competition with bituminous coal for the reason that each of these fuels has been available for years in this district at low cost. The cost of natural gas delivered to the industrial plant in the Pittsburgh district was so low for many years prior to 1918 that no serious attempt had been made to use bituminous coal in the coking plants economically. The waste of gas and other valuable products in the manufacture of coke by the beehive process is notorious. Not until the dwindling supply of natural gas forced a higher market price, and increased mining costs brought about a higher price for coal, did the management of the large steel and coke companies find it necessary to restrict the enormous waste hitherto allowed. The art of using coal for steel manufacture is now highly developed. Where the fuel is required in gaseous form, the coal is converted into gas either in a producer plant or as a by-product in the coking plant. This has developed a condition in the steel industry in which natural gas competes as a fuel with bituminous coal under circumstances in which the coal is most efficiently used.

In the Pittsburgh district, we find natural gas now being supplied to industrial consumers at prices ranging from 35¢ to 50¢ per M cubic feet. It is evident that the owner of an industrial plant will use natural gas at these prices only if he finds it cheaper to do this than to supply his fuel requirements from some other source. It is also evident that one industrial user may be able to purchase natural {fol. 1204} gas at a given price in preference to another fuel because his manufacturing process is one in which natural gas is peculiarly adapted for efficient use whereas another industrial user may find that at the same price natural gas is not his most economical fuel but that bituminous coal properly used results in greater economy.

We find that today the steel industry of the Pittsburgh district is emerging from the period when natural gas was

largely used as a fuel and entering a period in which bituminous coal supplies the fuel requirements formerly met by natural gas. It is evident that a critical period in the use of natural gas in the steel industry of the Pittsburgh district has been reached. It becomes important therefore to inquire as to the relative merits of these two fuels in steel making and to determine at what price natural gas passes from the more economical to the more expensive of the two fuels.

In the following Table No. 1 there is presented in summary form a calculation of the relative cost of melting steel in an open hearth furnace where natural gas competes with bituminous coal as a fuel. The calculations showing the cost resulting from the use of coal are conservative. The cost of gas coal at the mine is taken at $2.75 per ton for screened gas coal such as is used in the manufacture of producer gas. The freight rate is that now obtaining for coal delivered in Pittsburgh from the Connellsville District. The investment cost for the producer gas plant, and the operating cost of same have been carefully checked by engineers most familiar with this practice and the estimated cost as presented is deemed conservative. This comparison shows that natural gas will compete with coal in steel making up to a price of at least 35¢ per M cubic feet. The fairness of the calculation is further strengthened by the fact that natural gas is now being supplied to steel companies in the Pittsburgh district at 35¢ per M cubic feet.

2. Other Available Markets.

The transmission system of the United Fuel Gas Company [fol. 1205] is now connected with the lines of various other companies through which gas may be delivered to the principal natural gas markets of the Ohio valley. At comparatively small expense, connections with the lines of additional companies having large markets can be made. This situation is sufficiently strategic to enable the United Fuel Gas Company to command for its gas supply, once the limitations of existing contracts have expired, the maximum value of its gas supply. This situation is sufficiently real to make it unnecessary for the United Fuel Gas Company to undertake the actual construction of lines to the Pitts-

burgh district, as it will shortly be able to command a price at Cedarville or elsewhere which will neutralize the advantage of a direct market in Pittsburgh.

Value of Natural Gas

The various considerations enumerated above lead to the conclusion that the actual value of natural gas, as measured in the industrial market of the Pittsburgh district, is a proper value to be used in appraisal of the United Fuel Gas Company property. Existing contracts and regulations which prohibit to some extent the realization of such value for gas sold must be considered a liability of the company affecting earnings but not affecting the true value of the property owned, and ending with the expiration of the contracts or regulations now in force.

Appraisal

Principle of Appraisal

The property of the United Fuel Gas Company is considered to consist of two parts, (a) that property which would be useful for the production and transmission of gas were the present use of the property as a whole abandoned and a more profitable use substituted, and (b) such portion of the property as is useful only for the purpose of serving present markets.

The property useful for serving a new and more profitable market such as the industrial market of the Pittsburgh district includes the gas rights in leasehold property, gas wells and their equipment, field gathering lines, compressor stations and other equipment now used in the production, [fol. 1206] gathering and delivery of gas to and through the central gathering station of each of the several gas fields operated by the company, also a part of the transportation lines. Of the latter, all lines in and used in the delivery of gas from the Triple State Field are included, as gas from this field can be delivered to a profitable market, essentially as desirable as the Pittsburgh market. (Price received for gas delivered to Portsmouth Gas Company 30¢ per M cubic feet, and annual requirement approximates output of Triple State Field.) Transportation lines connecting the Kanawha and Spencer Fields with the

Clendenin Field (Cobb Station) and line used for the transmission of the collected gas to Cedarville are included.

Certain general equipment such as office building and equipment, etc., would be necessary for the operation of the company were present markets abandoned, hence these items of general equipment are included in the appraisal of the property useful in serving a new market.

The property useful only for the serving of present markets includes all distribution plants and a part of the main transportation lines leading from the central gathering stations to the points at which gas is now delivered.

The property useful in the production of gas for serving a new market is valued as a single complete unit. The appraisal of this property is carried out along lines generally used in the appraisal of mineral properties—the present value of expected earnings is found. The factors considered in the determination of expected earnings are those usually considered by practical gas men in determining the value of a property open to purchase. The method is no more theoretical than that commonly employed by the most practical gas company executive—it is his method reduced to standard engineering form.

Expected life of Property

The United Fuel Gas Company may be conservatively appraised as valuable for the production of natural gas for eighteen years beginning in 1924. A considerably longer, useful and profitable operation may fairly be expected, but no value is assigned in this appraisal for earnings that may accrue after the expiration of eighteen [fol. 1207] years. It may be pointed out that the life of a natural gas property depends upon the ultimate quantity of gas to be produced and the rate at which this gas is produced. The writer has shown elsewhere that the United Fuel Gas Company property may be expected to produce approximately 663.7 billion cubic feet of gas after 1923. In this appraisal an ultimate production of 636.1 billion cubic feet is given value.

Expected Purchases of Gas

The property is at present being operated by meeting the market requirements for gas by purchasing such quan

tities of gas as can be economically purchased, and by delivering from its own gas reserve the remaining quantity of gas necessary to meet market demand. It is essential that this policy be continued in the future operation of the property, hence in appraisal it is necessary to take into account the effect on earnings of handling purchased gas. In Table No. 2, there is shown the quantity of gas purchased in each past year by the three companies, also a conservative estimate of the quantity of gas that will be purchased in the future. This estimate of future gas purchases includes only the quantity of gas that may be expected through the continued operation of gas purchase contracts in effect January 1, 1924. Considerably greater quantities of gas will doubtless be purchased in the future and to whatever extent this is true, greater earnings than those indicated will be ultimately obtained.

Expected Annual Production

The production of the three companies for past years is shown in Table No. 2. In this table there is shown also the expected future annual production of the three companies used in this appraisal. It will be noted that the expected production in each of the first eight years is sufficient to maintain with the expected quantities of gas to be purchased a uniform delivery of 47.5 billion cubic feet. The Company is able at the present time to deliver from its own wells if necessary at least 47.5 billion cubic feet per year. It does not do this because it is able to purchase gas economically and thereby conserve its own gas supply. [fol. 1208] It will be noted that a decreasing output of gas is anticipated after the eighth year, the rate of decrease averaging about three billion cubic feet annually during the following ten-year period.

The writer believes that the above estimate of delivery of both produced and purchased gas is conservative.

New Wells Required

In order that the company may produce the above-mentioned quantities of gas in future years, the writer believes that a more active drilling program than that pursued in the past will be necessary. Such a drilling pro-

gram is formulated and shown herewith in Table No. 3. It is assumed that the company will drill 100 wells during 1924 of which 10% will be dry holes and 90% producers. (In the year 1923, 60 wells were drilled, 57 being producers and 3 dry.) The number of wells required annually thereafter is increased to a maximum of 220 wells in the ninth year of which 10% may be expected to be dry holes. After reaching a maximum drilling program after some eight or ten years, it is probable that the drilling program will decline. If the drilling program does not decline, it will be because the property is to continue an active producer after the expiration of eighteen years. It is therefore proper in the study of earnings expected during eighteen years only to assume a decline in the drilling program during the later years.

Abandonment of Wells

As the property becomes older, there will be an increase in the rate of abandonment of old wells. Up to the present time the necessity of abandoning wells has been slight, but as the older territory is depleted, abandonment will become more marked. An expected rate of abandonment starting with 25 wells in 1924 and increasing to 150 wells in the eighteenth year is indicated in Table No. 3.

[fol. 1209] Expected Number of Productive Wells

On January 1, 1924, the three companies owned 796.7 gas wells. The drilling program and abandonment program outlined indicates for each future year the probable number of active wells which shows a maximum of roughly 2,000 wells after about ten years' operation. The number of active wells in each year from 1912-1923 is shown graphically on Graph No. 1, and the number of active wells expected in the future is indicated also on this graph.

Average Well Production

The actual average annual production per well in each year from 1912 to 1923 is illustrated on Graph No. 1, also the expected future average annual production per well. It will be noted that decline in output per well is expected to

continue at the same average rate that has obtained during the past eleven years until the output declines to an average of 10 million feet per well annually. The experience of older gas properties shows that a production of this minimum amount per well can be maintained for some years, hence this minimum is expected in the later years.

Value of Gas

The value of natural gas delivered in the Pittsburgh district and measured by its value in steel manufacture in competition with bituminous coal has been shown to be not less than 35¢ per M cubic feet. The value calculated in Table No. 1—$0.3325 per M cubic feet is used, to allow for line loss between Cedarville and Pittsburgh.

The cost of transporting gas from Cedarville to the Pittsburgh district is estimated at $0.0526 per M cubic feet by Ford, Bacon & Davis, Inc. See Uebelacker Exhibit No. 1. The difference between the value of gas at Pittsburgh and the cost of delivering gas from Cedarville to Pittsburgh is $0.2799.

Cost of Gas

The actual cost to the three companies in the year 1923 of producing, purchasing and delivering gas in wholesale quantity, (exclusive of depletion, earning on investment or [fol. 1210] value of property, and Federal Income Taxes, but including general taxes, depreciation and general expense) has been determined by Ford, Bacon & Davis, Inc. to be $0.7989. See Uebelacker Exhibit No. 1.

Cost of New Wells

The cost of drilling and equipping new wells, extending field lines and abandoning wells is estimated at $11,000 per well. The use of material salvaged from abandoned wells and abandoned lines will be a factor in maintaining a reasonable cost. The average depth of wells will probably be about 2,000 feet.

The cost of drilling and equipping new wells and making field connections will actually be charged to investment by the company, but for the purpose of this study these costs are charged against the expected production in each year

that they occur. This calculation is shown in detail in Table No. 4.

Calculation of Value of Property

All of the above elements of appraisal are brought together in Table No. 5 in which the calculation of value is made. The following explanation of this calculation is presented in order that each item may be easily understood:

Column 1.—Year.

Column 2.—Expected Production in each year.

Column 3.—Expected gas purchases in each year.

Column 4.—Expected gas sales in each year.

Column 5.—Value of gas delivered through Cedarville. It will be noted that no increase in value is indicated although there will surely be an increase in value when the scarcity of gas makes it uneconomic for natural gas to compete with bituminous coal in the steel industry.

Column 6.—Estimated cost of producing and transporting gas in each year. This unit cost is based on the cost of $0.07989 for the year 1923, determined by Ford, Bacon & Davis, Inc., and for convenience considered to be $0.08. A [fol. 1211] trend in cost of ¼¢ per year, based on experience of the United Fuel Gas Company, is assumed.

Column 7.—Unit cost for new wells. Explained above and in detail in Table No. 4.

Column 8.—Total cost per M cubic feet—sum of columns 6 and 7.

Column 9.—Net value per M cubic feet—difference between column 5 and column 8.

Column 10.—Compound discount factor based on 8% value of money. This factor applied to the expected earnings of a given year reduces the amount to present worth on January 1, 1924.

Column 11.—Expected net income before amortization found by multiplying the unit value of gas shown in column 9 by the output of gas shown in column 4.

Column 12.—Present worth of expected net income before amortization. Found by multiplying the item in column 11 by the discount factor in column 10.

The total of column 11 shows the expected net income before amortization of cost. The total of column 12 shows the total present worth as of January 1, 1924. The differ-

ence ($35,210,094.07) indicates the excess of earnings over calculated value. These earnings will be subject to Federal Income Tax which is estimated on the basis of the present rate of taxation—12½%. The purchaser of this property at the value calculated might expect total Federal Income Taxes of $4,401,261.76 (first approximation). Allowing for this, he could afford to pay $52,181,538.17, thus having an investment on which he should expect a return of capital during 18 years and an average earning thereon of 8% after payment of Federal Income Taxes.

There is shown in Table No. 6 an illustration of the division of expected earnings between amortization of appraised value, Federal Income Taxes and remainder avail-
[fol. 1212] able for dividends. This illustration shows a variation in percentage earned on remaining investment, available for dividends. This variation from the 8% average is due to (a) the variation in the drilling program, the money remaining available for dividends being less than the average during years of most active drilling and above the average in years of inactive drilling; and (b) to the amount written off each year to amortize investment. Amortization has been calculated on the basis of ratio of production to reserves, as detailed in Table No. 7.

Summary

The value of the property useful for the serving of new but available markets is shown to be $52,181,538.17.

Of the above property there is included in addition to fee and leasehold property held for the production of natural gas, certain property which has recently been appraised as of December 31, 1923 by Ford, Bacon & Davis, Inc. (See Uebelacker Exhibit No. 2.) The following table gives the general classification and value of this property as determined by Ford, Bacon & Davis, Inc.:

	Value new	Value new less deterioration
Production System Property	$15,275,580 00	$10,127,919 00
Transmission System Property	9,268,525 00	8,865,962 00
General Property	822,366 00	729,528 00
Total	$25,366,471 00	$19,723,409 00

Total value of property useful in serving new market, as determined herein	$52,181,538 17
Depreciated value of property included other than natural gas fee and leasehold property	19,723,409 00
Value natural gas fee and leasehold property	$32,458,129 17

The value of property useful only in serving present markets is not determined by this appraisal, as the value of such property is dependent primarily on its being continued in service.

[fol. 1213] Table No. 1

Value of Natural Gas for Use in Steel Manufacture Determined by Comparison with Hot Producer Gas (Uncleaned) Manufactured from Connellsville Gas Coal

Estimate for Construction & Operating a Hot Producer Gas Plant of 90-ton Daily Capacity (No Production One Day per Week, Burning out Flu-, Three Eight-hour Shifts)

Construction Cost

1. Three producers	$25,000 00
2. Producer Building and Bunkers.	20,000 00
3. Steam Piping.	1,000 00
4. Foundations	9,000 00
5. Erection of Producer and Building .	3,000 00
6. Hot Gas Main—500' long.	6,000 00

7. Electrical Equipment and Installation	1,000 00	
8. Miscellaneous (Water pump, Tower Connections, Freight, etc.)	5,000 00	
9. Siding	7,000 00	
Total Investment.		$77,000 00

Operating Cost per Month

1. 30 tons coal per day per producer × 3 producers × $4.00 per ton 25 days (F. O. B. Plant including handling and breaking)	9,000 00
2. Labor 3 Gas Makers / 1 Ash Man / 6 Helpers = men @ $5 per day × 30 days.	1,500 00
3. Steam 60,000 lbs. steam per day × 25 days × $0.40 per 1,000 lbs	600 00
4. Repairs and Supplies.	250 00
5. Administratrative Expenses and Miscellaneous; Insurance, Taxes, Exec. Salaries, Travelling Expense, Telephone, etc	1,000 00
6. Depreciation (5% on $77,000 investment)	320 00
7. Power 5 H. P. per producer = 15 H. P. = 11 Kw. 11 × 24 hrs. = 264 K. W. H. × $0.03 per K. W. H. × 30 days	237 50
8. Interest on Investment (6% of $77,000)	385 00
Total Operating Expense	$13,292 50

[fol. 1214]

Revenue

1. 125,000 cubic feet gas per ton coal × 90 tons = 11,250,000 cu. ft. gas per day; 11,250,000 × 25 days = 280,000,000 cubic feet gas 280,000,000 cu. ft. to return $13,292.50 = $0.0475.

Comparison to Natural Gas

Producer Gas: B. t. u. per cubic ft. = about 150.
Natural Gas: B. t. u. cubic ft. = about 1,050.
Producer Gas = 1/7 Natural Gas in B. t. u. 7 × $0.0475 = $0.3325.

In determining the actual relative value of the two fuels considered above, it is necessary to take into account the following additional facts:

1. The use of natural gas increases the rate of steel production about 50% in the open hearth furnace.

2. The use of producer gas causes increased repairs to the open hearth furnaces on account of more frequent destruction of the furnace walls.

3. The sulphur content of producer gas affects the quality of the steel produced.

It is difficult to measure accurately the effect of these three items but it is conservative to consider that natural gas is preferable at a cost of 35¢ per M cubic feet.

DAVIS EXHIBIT "Z"—Continued

[fol. 1215]

Table No. 2

Table Showing Gas Produced in Each Year 1909-1923, Expected Annual Production 1924-1941, Gas Purchased 1909-1923, Expected Annual Gas Purchases Based on Contracts Existing January 1, 1924

Year	Gas produced in each year, 1909-1923, M cu. ft.	Gas purchased, 1909-1923, M cu. ft.
1909	3,370,874	None
1910	16,860,540	2,316,671
1911	19,721,836	4,003,352
1912	24,028,738	4,592,212
1913	22,757,578	5,394,022
1914	21,047,162	8,235,983
1915	19,578,870	10,015,803
1916	28,904,224	10,386,222
1917	48,921,616	11,689,250
1918	45,985,640	11,049,506
1919	42,235,495	9,951,503
1920	43,734,217	8,774,993
1921	33,464,075	9,205,038
1922	37,721,087	9,904,135
1923	37,370,482	9,669,753

Year	Expected annual production, 1924–1941, bil. cu. ft.	Expected annual gas purchases based on contracts existing January 1, 1924
1924	38 0	9 5
1925	38 5	9 0
1926	40 3	7 2
1927	42 9	4 6
1928	44 6	2 9
1929	44 7	2 8
1930	45 6	1 9
1931	46 8	0 7
1932	43 8	
1933	42 5	
1934	40 4	
1935	35 2	
1936	30 4	
1937	25 0	
1938	20 6	
1939	20 1	
1940	19 0	
1941	17 7	

DAVIS EXHIBIT "Z"—Continued

[fol. 1216]

Table No. 3

Table Showing Estimated Number Producing Wells Each Year and Expected Production

Year	Wells drilled	Dry holes	Producers	Abandoned wells	Net change	Producers end of year (1923=797)	Average production per well per mil. cu. ft.	Total production, billion cu. ft.
1923						796 7	45 5	
1924	100	10	90	25	65	862	44 0	38 0
1925	125	12	113	25	88	950	40 5	38 5
1926	150	15	135	25	110	1,060	38	40 3
1927	175	18	157	25	132	1,192	36	42 9
1928	190	19	171	50	121	1,313	34	44 6
1929	200	20	180	50	130	1,443	31	44 7
1930	200	20	180	50	130	1,573	29	45 6
1931	200	20	180	50	130	1,703	27 5	46 8
1932	220	22	198	75	123	1,826	24	43 8
1933	200	20	180	75	105	1,931	22	42 5
1934	180	18	162	75	87	2,018	20	40 4
1935	170	17	153	100	53	2,071	17	35 2
1936	140	14	126	100	26	2,097	14 5	30 4
1937	100	10	90	100	-10	2,087	12	25 0
1938	80	8	72	100	-28	2,059	10	20 6
1939	60	6	54	100	-46	2,013	10	20 1
1940	40	4	36	150	-114	1,899	10	19 0
1941	20	2	18	150	-132	1,767	10	17 7
	2,560	255	2,295	1,325				636 1

[fol. 1218]

Year	Gas production, bil. cu. ft.	Gas purchased, bil. cu. ft.	Gas sol bil. cu.
1924	38 0	9 5	47 5
1925	38 5	9 0	47 5
1926	40 3	7 2	47 5
1927	42 9	4 6	47 5
1928	44 6	2 9	47 5
1929	44 7	2 8	47 5
1930	45 6	1 9	47 5
1931	46 8	0 7	47 5
1932	43 8		43 8
1933	42 5		42 5
1934	40 4		40 4
1935	35 2		35 2
1936	30 4		30 4
1937	25 0		25 0
1938	20 6		20 6
1939	20 1		20 1
1940	19 0		19 0
1941	17 7		17 7
	636 1	38 6	674 7

Table No. 5

Calculation of Value

DAVIS EXHIBIT "Z"—Continued.

Passed, sq. ft.	Gas sold, bil. cu. ft.	M cu. ft. gas value at Cedarville	Producing, transmission, prospecting cost per M cu. ft., 1¢ trend	Cost new wells per M cu. ft.	Total cost per M cu. ft.
5	47 5	2799	0825	02895	11145
0	47 5	2799	0850	03571	12071
5	47 5	2799	0875	04094	12844
0	47 5	2799	0900	04487	13487
5	47 5	2799	0925	04686	13936
0	47 5	2799	0950	04922	14422
5	47 5	2799	0975	04825	14575
0	47 5	2799	1000	04701	14701
	43 8	2799	1025	05525	15775
	42 5	2799	1050	05176	15676
	40 4	2799	1075	04901	15651
	35 2	2799	1100	05313	16313
	30 4	2799	1125	05066	16316
	25 0	2799	1150	04400	15800
	20 6	2799	1175	04272	16022
	20 1	2799	1200	03284	15284
	19 0	2799	1225	02316	14566
	17 7	2799	1250	01243	13743
6	674 7				

Net value per M cu. ft	% c. d. f.	Expected net income before amortization	Present worth
16845	96225	$8,001,375 00	$7,699,323 09
15919	89097	7,561,525 00	6,737,091 93
15146	82497	7,194,350 00	5,935,122 92
14503	76387	6,885,925 00	5,262,243 14
14054	70728	6,675,650 00	4,721,553 73
13568	65489	6,444,800 00	4,220,635 07
13415	60638	6,372,125 00	3,863,929 16
13289	56146	6,312,275 00	3,544,089 92
12215	51987	5,350,170 00	2,781,392 88
12314	48136	5,233,450 00	2,519,173 49
12339	44571	4,984,956 00	2,221,844 74
11677	41269	4,110,304 00	1,696,281 36
11674	36212	3,848,896 00	1,356,104 14
12090	35382	3,022,500 00	1,069,420 95
11968	32761	2,465,408 00	807,692 31
12706	30334	2,553,906 00	774,701 85
13424	28087	2,550,560 00	716,375 99
14247	26007	2,521,719 00	655,823 46
		56,582,799 93	
	Earning	35,210,094 07	
		91,792,894 00	56,582,793 93
		12½ of Earning	4,401,261 76
		Market Value	52,181,538 17

[fol. 1217]

Table No. 4

Estimated Cost New Investment ($11,000.00 per Well)

Year	Wells drilled	Cost	Annual production, bil. cu. ft.	Cost M cu. ft.
1924	100	$1,100,000 00	38 0	02895
1925	125	1,375,000 00	38 5	03571
1926	150	1,650,000 00	40 3	04094
1927	175	1,925,000 00	42 9	04487
1928	190	2,090,000 00	44 6	04686
1929	200	2,200,000 00	44 7	04922
1930	200	2,200,000 00	45 6	04825
1931	200	2,200,000 00	46 8	04701
1932	220	2,420,000 00	43 8	05525
1933	200	2,200,000 00	42 5	05176
1934	180	1,980,000 00	40 0	04901
1935	170	1,870,000 00	35 2	05313
1936	140	1,540,000 00	30 4	05066
1937	100	1,100,000 00	25 0	04400
1938	80	880,000 00	20 6	04272
1939	60	660,000 00	20 1	03284
1940	40	440,000 00	19 0	02316
1941	20	220,000 00	17 7	01243

(Here follows table No. 5 of Davis Exhibit "Z," marked side folio page 1218)

DAVIS EXHIBIT "Z"—Continued

[fol. 1219]

Table No. 6

Division of Expected Income Between Amortization, Federal Income Tax, Available for Dividends

Year	Expected net income before amortization	Amortization	Expected net income after amortization	Federal income taxes (assume 12½%)	Remaining net income for dividends	Expected earnings available for dividends, %
1924	$8,001,375 00	$3,117,274 71	$4,884,100 29	$610,512 54	$4,273,587 75	8.190
1925	7,561,525 00	3,158,291 48	4,403,233 52	550,404 19	3,852,829 33	7.853
1926	7,194,350 00	3,305,951 86	3,888,398 14	486,049 77	3,402,348 37	7.412
1927	6,888,925 00	3,519,239 08	3,369,685 92	421,210 74	2,948,475 18	6.921
1928	6,675,650 00	3,658,686 11	3,016,963 89	377,119 24	2,639,834 65	6.755
1929	6,444,800 00	3,666,869 46	2,777,930 54	347,237 57	2,430,662 97	6.862
1930	6,372,125 00	3,740,729 65	2,631,395 35	328,924 42	2,302,470 93	7.251
1931	6,312,275 00	3,839,169 91	2,473,105 09	309,138 14	2,163,966 95	7.724
1932	5,350,170 00	3,593,069 27	1,757,100 73	219,637 59	1,537,463 14	6.360
1933	5,233,450 00	3,486,425 66	1,747,024 34	218,378 04	1,528,646 30	7.427
1934	4,984,956 00	3,314,155 22	1,670,800 78	208,850 10	1,461,950 68	8.551
1935	4,110,304 00	2,887,580 79	1,222,723 21	152,840 40	1,069,882 81	7.763
1936	3,548,896 00	2,493,819 77	1,055,076 23	131,884 53	923,191 70	8.474
1937	3,022,500 00	2,050,838 63	971,661 37	121,457 67	850,203 70	10.121
1938	2,465,408 00	1,689,891 03	775,516 97	96,939 62	678,577 35	10.687
1939	2,553,906 00	1,648,874 26	905,031 74	113,128 97	791,902 77	16.995
1940	2,550,560 00	1,558,637 36	991,922 64	123,990 33	867,932 31	28.829
1941	2,521,719 00	1,451,993 75	1,069,725 25	133,715 66	936,009 59	64.464
	91,792,894 00	52,181,538 00	39,611,356 00	4,951,419 52	34,659,936 48	

DAVIS EXHIBIT "Z"—Continued

[fol. 1220]

Table No. 7

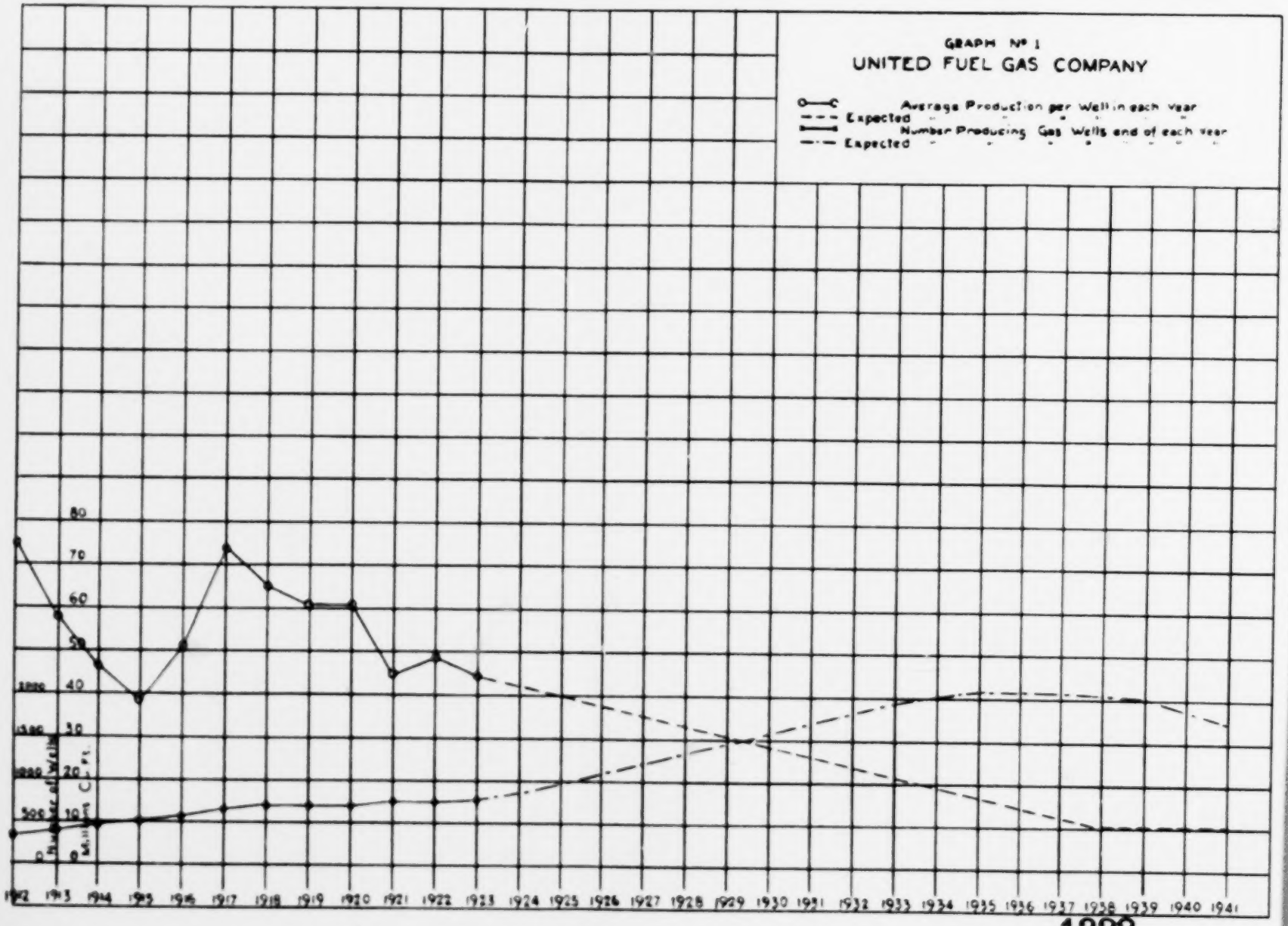
Calculation of Amortization

Year	Ratio of production to reserve		Capital sum to be amortized	Amount amortized
1924	38 0 / 636 1	X	$52,181,538 00	$3,117,274 71
1925	38 5 / 636 1	X	"	3,158,291 48
1926	40 3 / 636 1	X	"	3,305,951 86
1927	42 9 / 636 1	X	"	3,519,239 08
1928	44 6 / 636 1	X	"	3,658,696 11
1929	44 7 / 636 1	X	"	3,666,899 46
1930	45 6 / 636 1	X	"	3,740,729 65
1931	46 8 / 636 1	X	"	3,839,169 91
1932	43 8 / 636 1	X	"	3,593,069 27
1933	42 5 / 636 1	X	"	3,486,425 66

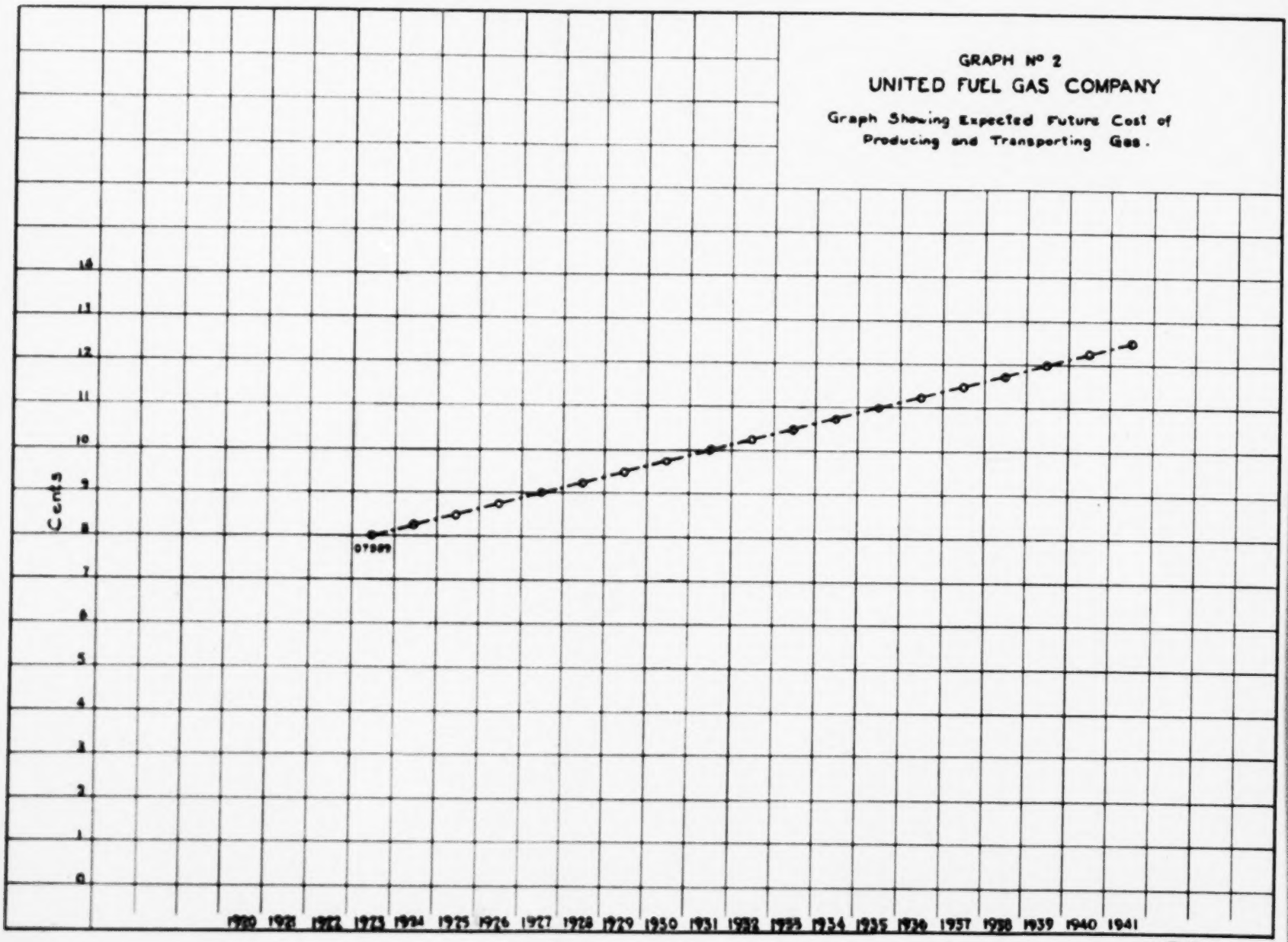
DAVIS EXHIBIT "Z"—Continued

Year	Ratio of production to reserve		Capital sum to be amortized	Amount amortized
1934	40 4 / 636 1	X	"	3,314,155 22
1935	35 2 / 636 1	X	"	2,887,580 79
1936	30 4 / 636 1	X	"	2,493,819 77
1937	25 0 / 636 1	X	"	2,050,838 63
1938	20 6 / 636 1	X	"	1,689,891 03
[fol. 1221]				
1939	20 1 / 636 1	X	$52,181,538 00	$1,648,874 26
1940	19 0 / 636 1	X	"	1,558,637 36
1941	17 7 / 636 1	X	"	1,451,993 75
				52,181,538 00

(Here follow graphs Nos. 1 and 2, marked side folio pages 1222 and 1223)


GRAPH No 1
UNITED FUEL GAS COMPANY
Average Production per Well in each year
Expected
Number Producing Gas Wells end of each year
Expected
80
70
60
50
40
30
20
10
0
1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941

1222


GRAPH Nº 2
UNITED FUEL GAS COMPANY
Graph Showing Expected Future Cost of Producing and Transporting Gas.
Cents
0
1
2
3
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14
07909
1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941

[fol. 1224] MEADOWS EXHIBIT No. 1

Certificate of Valuation

The Huntington Real Estate Board, Huntington, West Virginia

No. 79

We, the undersigned, acting members of the Valuation Committee of The Huntington Real Estate Board, have carefully considered the application of United Fuel Gas Company for a valuation of the following described property: being the value of land only without any improvements thereon.

	Valuation
Parcel No. 1. All that certain piece of parcel of land known as lot No. 25 in block No. 94—30 x 160—814 Fourth Ave., Huntington, W. Va.	$67,250 00
Parcel No. 2. All that certain piece of parcel of land situated at the south west corner of 1st St. & 5th Ave. 168' on 1st St. 106' on 5th Ave. 87' on alley, Huntington, West Va.	11,250 00
Parcel No. 3. All that certain piece of parcel of land situated north east corner of 11th St. West and Railroad Ave. 50' on 11th St. 25' on Railroad Ave., Huntington, West Va. Valuation per front foot $10.00	500 00
Parcel No. 4. All that certain piece of parcel of land situated at north east corner 12th Ave. & 1st St. 194.5' on 12th Ave. 200' on 2nd St. 201.3' on 1st St. and 217.5' on 11½ alley, Huntington, West Va.	20,000 00

	Valuation
Parcel No. 5. All that certain piece of parcel of land situated on the West side of 16th St. Road & Washington Branch and Four Pole 30' on 16th St. and 43' deep, Huntington, West Va. Valuation per front foot $33⅓	1,000 00
Parcel No. 6. All that certain piece of parcel of land situated the East side of Gallia St. 15' on Gallia St. 25' deep, valuation per front foot $16⅔, Huntington W. Va.	250 00
Parcel No. 7. All that certain piece of parcel of land lot No. 12 block 218—30 x 180' 5th Ave. between 22nd and 23rd Sts. Huntington, West Va. Valuation per front foot $66⅔	2,000 00
Parcel No. 8. All that certain piece of parcel of land known as parts of lots No. 12 and 63 Pleasant View Addition 34' on 32nd St. 105' on 3rd Ave. Huntington, W. Va. Valuation per front foot, $50.00	1,700 00
Total	$103,950 00

We hereby certify that we have personally examined said premises, and that we have no personal interest in the property herein valued and that in our opinion said property is worth:—Land $103,950.00.

This is to Certify, that this appraisal was made by the members of the Valuation Committee of The Huntington Real Estate Board whose signatures appear thereon and is issued as an Official Appraisal of The Huntington Real Estate Board.

In Testimony Whereof, witness the signatures of its President and Secretary, this 7th day of March, A. D. 1924.

The Huntington Real Estate Board, (Signed) by H. O. Dunfee, President. H. K. Pancake, Secretary. Valuation Committee: Azel Meadows (Chairman), H. O. Dunfee (Member), C. R. Varnum (Member). (Seal.)

[fol. 1225] GOOD EXHIBIT No. 1

Certificate of Appraisal

The Charleston Real Estate Board, of Charleston, West Virginia, certifies to the United Fuel Gas Company, Charleston, West Virginia, that its appraisal committee, having no personal interest, has inspected the following described property:

Land: Lot 50 x 120 feet, southeastern corner of Quarrier and Dunbar Streets, in the City of Charleston, West Virginia.

Buildings: Not Appraised.

And is of the opinion that the value of the property is as follows:

Present market value of land 50' @ $1,900	$95,000 00
Present market value of buildings	Not appraised.
Total present market value	$95,000 00
Present cash market value of land	$90,000 00
Present cash market value of buildings	Not appraised.
Total present cash market value	$90,000 00

Charleston Real Estate Board, (Signed) by E. Steen, Vice-President. Hugh W. May, Secretary.

Dated March 13th, 1924.

[fol. 1226] GOOD EXHIBIT No. 2

Certificate of Appraisal

The Charleston Real Estate Board, of Charleston, West Virginia, certifies to the United Fuel Gas Company, Charleston, West Virginia, that its appraisal committee, having no personal interest, has inspected the following described property:

Land: Lot 40 x 120 feet at #131 south side Virginia Street (West) in the City of Charleston, West Virginia. (Lot has an alley on side and rear.)

Buildings: Not Appraised.

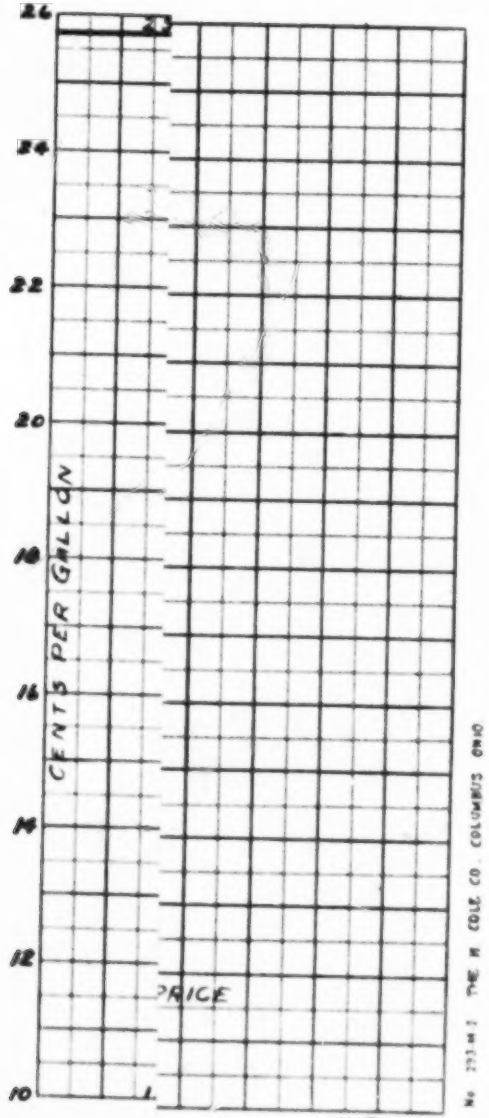
And is of the opinion that the value of the property is as follows:

Present market value of land 40' @ $300	$12,000 00
Present market value of Buildings	Not appraised.
Total present market value	$12,000 00
Present cash market value of land	$11,500 00
Present cash market value of buildings	Not appraised.
Total present cash market value	$11,500 00

Charleston Real Estate Board, (Signed) by E. Steen, Vice President. Hugh W. May, Secretary.

Dated March 13, 1924.

(Here follow Hightower Exhibits Nos. 1 and 1a, marked side folio pages 1227 and 1228)


26
24
22
20
18
16
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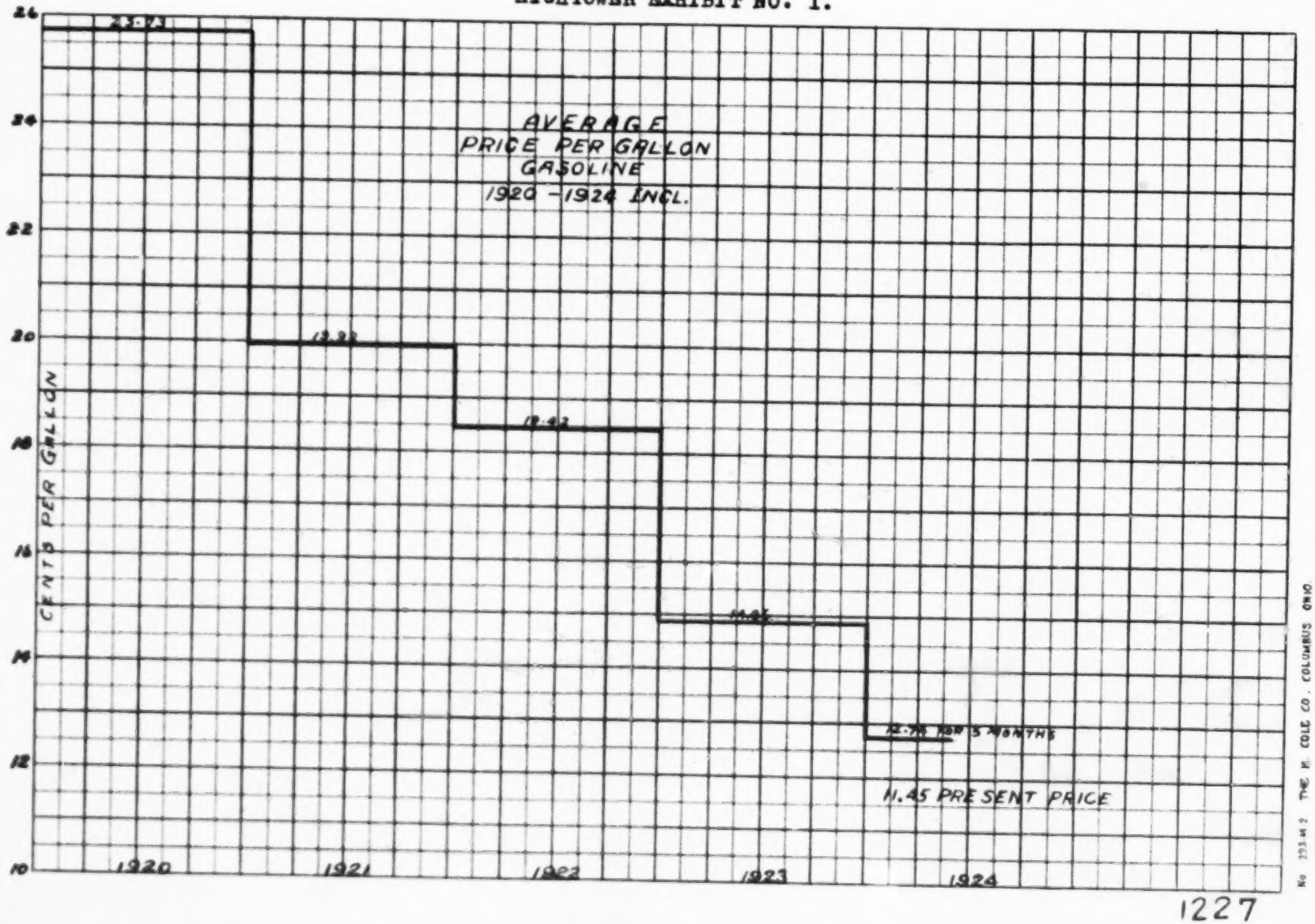
12
10
CENTS PER GALLON
PRICE
THE M COLE CO. COLUMBUS OHIO

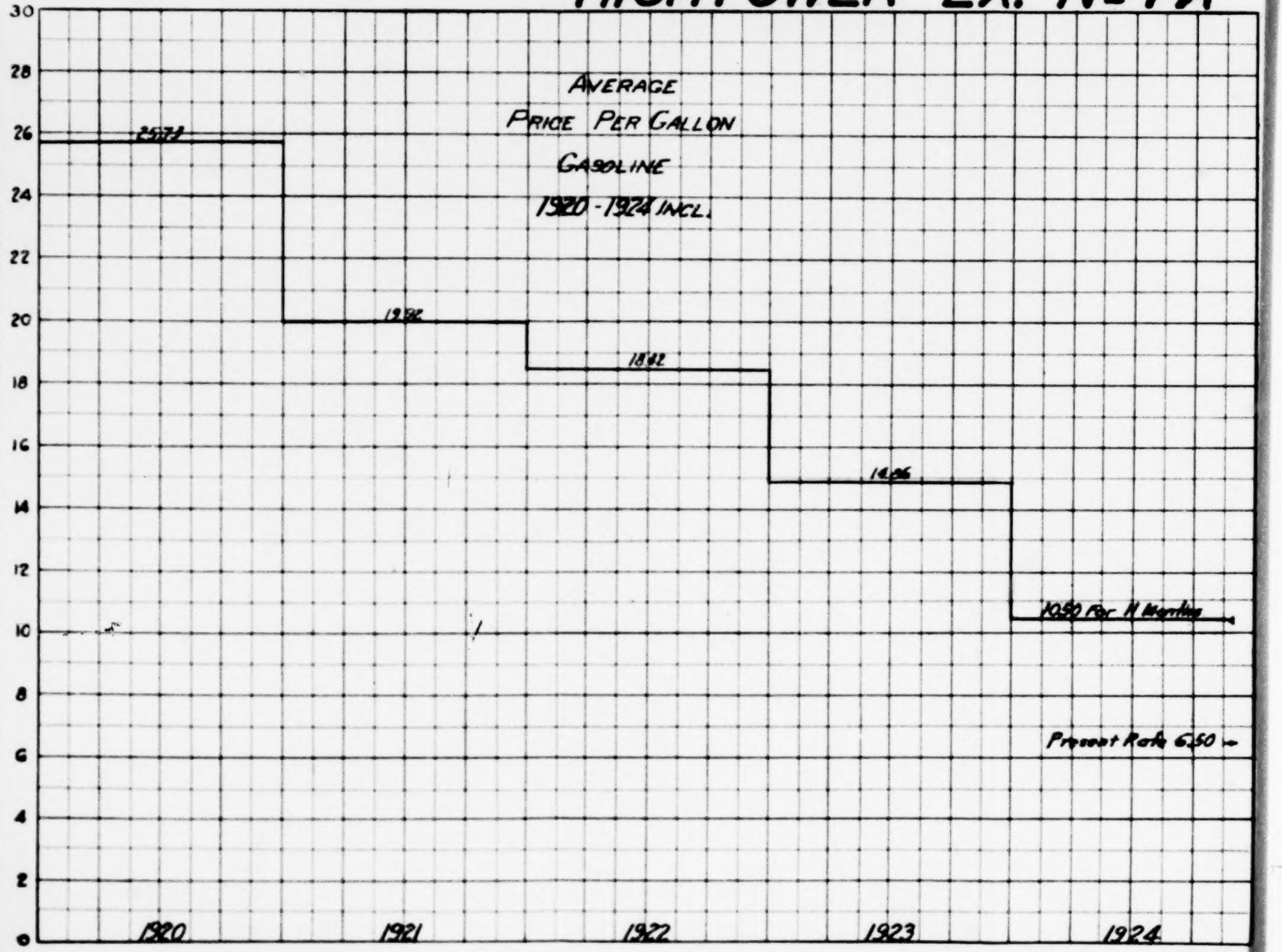
1227

HIGHTOWER EXHIBIT NO. 1.



1227

HIGHTOWER EX. Nº 1-A



1228

[fol. 1229] HIGHTOWER EXHIBIT No 2

United Fuel Gas Company and Warfield Natural Gas Company

Amount of Gas Sold to Various Classes of Consumers and Average Price Received Therefor, 1923 and Year Ending April 30, 1924

	M cu. ft.	Avg. price
Year 1923:		
Domestic	7,886,357	2469
Industrial	7,703,600	2317
Field Operations	1,384,107	0870
Wholesale	30,066,171	1285
Total	47,040,235	1640
Year ending April 30, 1924:		
Domestic	8,334,604	2473
Industrial	7,271,669	2321
Field Operations	1,179,587	0997
Wholesale	29,982,320	1389
Total	46,768,180	1717

HIGHTOWER EXHIBIT No. 2—Continued

Wholesale (Exclusive of sales to Columbia Gas & Electric Co. and the Ohio Fuel Gas Co.):

Year 1923	12,452,998	2073
Year ending April 30, 1924	13,064,345	2243

	Year 1923	Year ending Apr. 30, 1924
Average Domestic Rate in West Va. Cities	2139	2140
Average Industrial Rate " " "	1893	1895
Average Domestic Rate—Cities outside W. Va.	3478	3492
Average Industrial " " " "	3047	3056

In West Va. Cities:

Year 1923	No. of consumers	M cu. ft.	Average rate	Revenue
Domestic	32,566	5,811,644	2139	$1,243,145 14
Industrial	68	4,781,604	1893	904,957 07

In Cities Outside of West Va.:

Domestic	14,440	1,884,283	3478	655,405 78
Industrial	52	1,650,086	3047	502,854 55

(Here follows Hightower Exhibit No. 2a, marked side folio page 1230)

[fol. 1230]

Hightower Exhibit No. 2-A

Gasoline Earnings by Months for First Ten Months 1924

	January	February	March	April	May	June	July	August	September	October
Gross Gasoline Earnings	333,633.84	366,932.46	357,974.93	183,568.81	191,080.74	112,854.72	75,541.22	80,112.20	104,620.19	101,190.52
Operating Expense	90,140.80	86,175.89	81,109.74	80,882.53	60,256.79	47,508.85	38,635.63	45,669.75	52,092.81	64,199.57
General Expense	5,854.03	7,017.49	5,793.90	5,955.60	6,199.24	5,955.75	4,827.89	6,889.69	5,501.23	5,742.74
General Taxes	1,551.23	1,978.21	1,975.71	1,983.17	1,974.84	1,977.34	1,979.60	1,979.14	1,981.16	1,999.41
Bond Interest	3,023.49	3,023.49	2,871.20	2,874.17	2,871.20	2,584.08	2,863.96	2,857.62	2,857.62	2,857.62
1/8th Royalty	37,440.32	40,643.73	33,537.51	31,944.98	22,551.66	13,626.76	8,779.42	9,499.81	11,984.38	13,612.58
Total Expense	138,009.87	138,838.81	125,288.06	123,640.45	93,853.73	71,652.78	57,086.50	66,896.01	74,417.20	88,411.92
Net Earnings (Before Federal Taxes & Depreciation)	195,623.97	228,093.65	232,686.87	59,928.36	97,227.01	41,201.94	18,454.72	13,216.19	30,202.99	12,778.60
Federal Taxes	22,980.79	27,039.50	27,613.66	6,018.17	10,681.17	3,678.04	834.64	179.82	2,303.17	125.12
Depreciation	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61
Net Gasoline Earnings	160,865.57	189,276.54	193,295.60	42,131.91	74,768.23	25,746.29	5,842.47	1,258.76	16,122.21	875.87

[fol. 1231] HIGHTOWER EXHIBIT No. 3

United Fuel Gas Company

Statement of Receipts from Gas Sales, Cities of Huntington and Charleston, by Months, for Year 1923

	Domestic	Industrial	Total
Huntington:			
January	50,387 44	17,819 42	68,206 86
February	51,023 58	8,534 45	59,558 03
March	44,714 77	12,525 12	57,239 89
April	36,019 01	18,790 07	54,809 08
May	20,161 37	19,662 12	39,823 49
June	12,136 75	17,398 00	29,534 75
July	10,459 76	19,849 20	30,308 96
August	11,173 75	14,944 60	26,118 35
September	12,738 73	15,968 40	28,707 13
October	19,716 48	18,458 80	38,175 28
November	38,493 24	15,780 45	54,273 69
December	43,399 75	16,793 00	60,192 75
	350,424 63	196,523 63	546,948 26
Charleston:			
January	89,436 49	44,093 80	133,530 29
February	81,759 94	32,046 85	113,806 79
March	75,597 77	42,872 87	118,470 64
April	61,146 75	43,244 31	104,391 06
May	34,142 92	48,520 16	82,663 08
June	21,558 03	45,352 50	66,910 53
July	19,209 37	44,547 23	63,756 60
August	18,905 18	44,321 00	63,226 18
September	22,101 67	45,130 88	67,232 55
October	35,613 18	49,481 80	85,094 98
November	66,294 33	42,216 68	108,511 01
December	68,654 37	34,671 08	103,325 45
	594,420 00	516,499 16	1,110,919 16

HIGHTOWER EXHIBIT No. 3—Continued

[fol. 1232] United Fuel Gas Company

Statement of Receipts from Gas Sales, Cities of Huntington and Charleston, by Months, for Year Ending April 30, 1924

	Domestic	Industrial	Total
Huntington:			
May, 1923	20,161 37	19,662 12	39,823 49
June	12,136 75	17,398 00	29,534 75
July	10,459 76	19,849 20	30,308 96
August	11,173 75	14,944 60	26,118 35
September	12,738 73	15,968 40	28,707 13
October	19,716 48	18,458 80	38,175 28
November	38,493 24	15,780 45	54,273 69
December	43,399 75	16,793 00	60,192 75
January, 1924	57,817 65	8,056 56	65,874 21
February	55,629 47	9,202 29	64,831 76
March	52,064 75	15,041 39	67,106 14
April	36,858 48	19,564 28	56,442 76
	370,650 18	190,719 09	561,369 27
Charleston:			
May, 1923	34,142 92	48,520 16	82,663 08
June	21,558 03	45,352 50	66,910 53
July	19,209 37	44,547 23	63,756 60
August	18,905 18	44,321 00	63,226 18
September	22,101 67	45,130 88	67,232 55
October	35,613 18	49,481 80	85,094 98
November	66,294 33	42,216 68	108,511 01
December	68,654 37	34,671 08	103,325 45
January, 1924	93,148 38	27,998 70	121,147 08
February	96,925 37	29,420 30	126,345 67
March	85,407 83	34,880 60	120,288 43
April	57,692 02	28,784 94	86,386 96
	619,562 65	475,325 87	1,094,888 52

[fol. 1233]

HIGHTOWER EXHIBIT No. 3-A

United Fuel Gas Company

Statement of Gas Sales and Expenses for Year Ending November 30, 1924

	M c f	Amount	M c f	Amount
Domestic	8,479,200	2,102,087.06	.....	.....
Industrial	5,713,859	1,398,468.26	.....	.....
Field	714,666	71,466.75	.....	.....
Wholesale	29,230,960	4,172,418.10	.....	.....
			44,138,685	7,744,440.17
Misel. Gas Earnings	.....	.....	.....	18,843.09
Gasoline Royalty	.....	.....	.....	267,402.44
				8,030,685.70
Less gas expense:				
Gas Purchased	10,465,521	705,021.87	.....	.....
Production	.....	1,230,732.83	.....	.....
Transmission	.....	621,636.67	.....	.....
Distribution	.....	261,304.64	.....	.....
Commercial	.....	135,293.06	.....	.....
General	.....	274,147.00	.....	.....
General Taxes	.....	495,918.65	.....	.....
Federal Taxes	.....	103,565.39	.....	.....
			10,465,521	3,827,620.11
Net gas earnings (before depletion & depreciation)				4,203,065.59

[fol. 1234]

HIGHTOWER EXHIBIT No. 4

United Fuel Gas Company

Analysis of Miscellaneous Income, West Virginia Distribution Plants, Year 1923

	Shop	Misc.	Total
Charleston	877.37	3,370.69	4,248.06
Huntington	466.30	56.60	522.90
Williamson	.....	36.77	36.77
Spencer	72.76	28.98	101.74
Sundry, W. Va.	61.67	2,401.78	2,463.45
Total	1,478.10	5,894.82	7,372.92

[fol. 1235]

HIGHTOWER EXHIBIT No. 4-A

United Fuel Gas Company

Increase in Capital Expenditures from December 31, 1923, to November 30, 1924

	Distribution	Production	Transmission	Total
Pipe	24,694.62	11,940.21	3,013.64	39,648.47
Casing in Wells	.....	116,709.49	.....	116,709.49
Other Well Construction	.....	290,048.75	.....	290,048.75
Acreage	.....	18,181.75	.....	18,181.75
Rights of Way	11.00	579.56	.....	590.56

Rights of Way Expense	5.00	475.46	373.00	853.46
Buildings	5,353.26	4,255.31	1,563.15	11,171.72
Fittings	1,645.87	1,563.27	399.76	3,608.90
Gate Valves & Other Material	1,037.26	1,118.70	524.87	2,680.83
Labor, Teaming & Freight	16,771.24	14,749.46	3,807.30	35,328.00
Regulators	942.57	50.12	169.29	1,161.98
Teleg. & Telep. Lines	.....	.....	2,280.72	2,280.72
Office Furniture	1,754.90	29.56*	35.73*	1,689.61
Large Tools	630.49	391.12	350.09	1,371.52
Meters	44,166.00	30.42	801.78	44,998.20
Compressor Stations	.....	.....	54,457.59	54,457.59
Measuring Stations	183.73	1,787.69	1,236.16*	735.26
Service Lines	36,078.32	.....	.....	36,078.32
Horses, Wagons, Autos	2,990.71	2,083.93*	2,935.48	3,842.26
Drilling & Co. Tools	.....	707.58	.....	707.58
Cost of Financing	.....	.....	.....	494.50
	136,264.88	460,475.40	69,404.69	666,639.47
Incomplete Construction	8,053.65	531,073.17	794,910.28	1,334,037.10
	144,318.53	991,548.57	864,314.97	2,000,676.57

[*Red in copy.]

[fol. 1230]

EXHIBIT 3, J. C. HIGHTOWER #4 B

United Fuel Gas Company

Increase in Capital Expenditures from December 31, 1923, to December 31, 1924

	Distribution	Production	Transmission	Total
Pipe	33,284.04	213,107.96	101,633.12	348,025.12
Casing in Wells		170,806.06		170,806.06
Other Well Construction		442,351.70		442,351.70
Acreage		28,447.06		28,447.06
Rights of Way	36.00	5,292.37	1,321.37	6,649.74
Rights of Way Expense	5.00	5,487.31	1,191.63	6,683.94
Buildings	10,796.49	4,177.39	10,794.04	25,767.92
Fittings	1,853.76	4,869.58	783.53	7,506.87
Gate Valves & Other Material	1,189.80	3,761.21	2,565.06	7,516.07
Labor, Teaming & Freight	19,411.58	120,737.20	78,553.67	218,702.45
Regulators	1,123.82	50.12	169.29	1,343.23
Telegraph & Telephone			2,394.14	2,394.14
Office Furniture	2,435.93	29.56*	77.62*	2,328.75
Large Tools	819.10	391.12	350.00	1,560.22
Meters	45,594.94	142.55	515.26	46,252.75
Compressor Stations			670,078.28	670,078.28
Measuring Stations	3,035.05	9,204.38	2,129.70	14,369.13
Service Lines	38,347.54			38,347.54

Horses, Wagons, Autos	3,032.58	2,082.93*	2,935.48	3,885.13
Drilling & Co. Tools		1,596.39		1,596.39
Cost of Financing				165.75
	160,365.63	1,008,389.91	875,336.95	2,044,778.24
Incomplete Construction	546.67*	48,858.45	32,029.82	80,341.60
	160,418.96	1,057,168.36	907,366.77	2,125,119.84

[*Red in copy.]

United Fuel Gas Co., Warfield Natural Gas Co., and Cabin Creek Gas Co., Consolidated.

Total Gas Sales and Expenses, Sales and Revenues from West Virginia Cities, Mileage of Transmission Lines, and Total Expenses (Intercompany Items Eliminated) for Years 1921, 1922, 1923, and Year Ending April 30, 1924

	1921	1922	1923	Year ending April 30, 1924
Total Sales, M Cu. Ft.	42,669,113	47,625,222	47,040,235	46,768,180
Less Field Sales, M Cu. Ft.	1,057,989	1,458,377	1,384,107	1,179,587
Gas handled in Transmission	41,611,124	46,166,845	45,656,128	45,588,593
Less Wholesale M Cu. Ft. and Distribution outside W. Va. Cities	32,182,250	36,878,120	35,062,880	34,976,899
West Va. Cities Distribution	9,428,874	9,288,725	10,593,248	10,611,694
West Va. Cities Domestic	4,402,185	5,088,708	5,811,644	6,110,752
West Va. Cities Industrial	5,026,689	4,200,017	4,781,604	4,500,942
Revenues:				
West Va. Cities Domestic Sales	936,975 64	1,081,048 42	1,243,145 14	1,307,423 98
West Va. Cities Industrial Sales	801,012 61	759,964 49	904,957 07	852,888 53
Total Gas Earnings, W. Va. Cities	1,737,988 25	1,841,012 91	2,148,102 21	2,160,327 51
West Va. Cities Miscellaneous Income	1,258 49	5,881 80	7,372 92	5,044 14

West Va. Cities Total Gross Income	1,739,246 74	1,846,894 71	2,155,475 13	2,165,371 65
Mileage of Transmission Lines:				
Major	443 30	444 70	458 00	457 96
Minor	81 90	81 90	81 90	81 90
Total	525 20	526 60	539 90	539 86
Expenses:				
Production	1,284,951 14	1,206,718 85	1,227,672 67	1,243,657 01
Less Gas used in own operation	7,898 62	5,426 88	5,294 93	4,590 82
Net	1,277,052 52	1,201,291 97	1,222,377 74	1,239,066 19
Transmission	514,328 40	565,269 74	600,084 20	600,864 65
Less Gas used in own operation	103,741 41	127,921 05	137,437 25	137,723 11
Net	410,586 99	437,348 69	462,646 95	463,141 54
Distribution	249,289 58	252,445 00	281,434 30	321,771 20
Less Gas used in own operation	972 53	1,112 42	1,294 36	2,785 14
Net	248,317 05	251,332 58	280,139 94	318,986 06

HIGHTOWER EXHIBIT No. 5—Continued

	1921	1922	1923	Year ending April 30, 1924
Total net Production, Transmission and Distribution Expense	1,935,956 56	1,889,973 24	1,965,164 63	2,021,193 79
% of Total Net Production	65 96	63 56	62 20	61 30
% of Total Net Transmission	21 21	23 14	23 54	22 91
% of Total Net Distribution	12 83	13 30	14 26	15 79
General Expenses & Taxes	832,434 42	867,539 60	839,828 50	908,431 45
Gas Purchased, Amount	444,390 13	556,410 38	619,263 69	651,168 66
Gas Purchased, Quantity, M. Cu. Ft.	9,295,038	9,904,135	9,662,753	9,802,927

[fol. 1238]

HIGHTOWER EXHIBIT No. 5-A

United Fuel Gas Company

Statement of Receipts from Gas Sales, Cities of Huntington and Charleston, by Months for Year Ending November 30, 1924

Huntington:	Domestic	Industrial	Total
1923, December	43,399 75	16,793 00	60,192 75
1924, January	57,817 65	8,056 56	65,874 21
February	55,629 47	9,202 29	64,831 76
March	52,064 75	15,041 39	67,106 14
April	36,858 48	19,564 28	56,422 76
May	26,600 05	21,661 89	48,261 94
June	16,172 56	22,385 56	38,558 12
July	10,608 51	16,776 10	27,384 61
August	10,382 82	14,872 01	25,254 83
September	14,265 11	10,123 64	24,388 75
October	19,918 03	7,425 93	27,343 96
November	33,023 35	12,914 84	45,938 19
	376,740 53	174,817 49	551,558 02

HIGHTOWER EXHIBIT No. 5 a—Continued

Charleston:	Domestic	Industrial	Total
1923, December	68,654 37	34,671 08	103,325 45
1924, January	93,148 38	27,998 70	121,147 08
February	96,925 37	29,420 30	126,345 67
March	85,407 83	34,880 60	120,288 43
April	57,602 02	28,784 94	86,386 96
May	39,404 13	24,087 43	63,491 56
June	26,247 27	22,539 02	48,786 29
July	18,464 46	25,575 68	44,040 14
August	18,831 35	21,926 88	40,758 23
September	24,431 81	20,501 54	44,933 35
October	33,156 42	20,014 14	53,170 56
November	57,365 23	21,126 88	78,492 11
	619,638 64	311,527 19	931,165 83

[fol. 1239]

HIGHTOWER EXHIBIT No. Y

United Fuel Gas Company

Statement of Borrowed Money, Years 1909 to 1924, Inclusive

	Cash	Bonds	Total
Year 1909:			
First Nat'l. Bank, New Bethlehem, Pa.	10,000 00		
Peoples Nat'l. Bank, East Brady, Pa.	5,000 00		
First Nat'l. Bank, Clarington, Ohio	5,000 00		
Peoples Nat'l. Bank, Sistersville, W. Va.	5,000 00		
Peoples Nat'l. Bank, Zeninople, Pa.	5,000 00		
First Nat'l. Bank, Emlenton, Pa.	20,000 00		
Brookville Title & Trust Co., Brookville, Pa.	10,000 00		
Clarion Co. Nat'l. Bank, Knox, Pa.	8,000 00		
Western Trust Co., Chicago, Ill.	40,000 00		
" " " " "	5,000 00		
P. A. Myers, Chicago, Ill.	10,000 00		
Union Nat'l. Bank, Pittsburgh, Pa.	100,000 00		
Standard Oil Company, New York	100,000 00		
" " " " "	100,000 00		
			429,000 00
Year 1910:			
Standard Oil Company, New Jersey	510,000 00		
" " " New York	357,000 00		
Ohio Fuel Supply Co., Pittsburgh, Pa.	868,000 00		
			1,735,000 00

1001

HOOVER EXHIBIT NO. Y—Continued

	Cash	Bonds	Total
Year 1911:			
Standard Oil Company, New York	178,500 00		
" " " New Jersey	101,000 00		
Ohio Fuel Supply Co., Pittsburgh, Pa.	270,500 00		
			550,000 00
Year 1912:			
Standard Oil Company, New Jersey	214,200 00		
Ohio Fuel Supply Co., Pittsburgh, Pa.	205,800 00		
			420,000 00
Year 1913:			
Standard Oil Company, New Jersey	100,000 00		
Treat & Crawford, Pittsburgh, Pa.	50,000 00		
			150,000 00
Year 1914:			
Geo. W. Crawford, Pittsburgh, Pa.	86,750 00		
Standard Oil Company, New Jersey	38,250 00		
			125,000 00
Year 1915:			
Ohio Fuel Supply Co., Pittsburgh, Pa.	36,750 00		
Union Nat'l. Bank, Pittsburgh, Pa.	300,000 00		
A. B. Leach & Co., New York	100,000 00		
			436,750 00
Year 1916:			
A. B. Leach & Co., New York	300,000 00		
Hamilton Nat. Gas Co. (Pur. of Property)	125,000 00		

[fol. 1240]

	January	
Gross Gasoline Earnings	333,633 84	36
Operating Expense	90,140 80	8
General Expense	5,854 03	
General Taxes	1,551 23	
Bond Interest	3,023 49	
1/8th Royalty	37,440 32	4
Total Expense	138,009 87	13
Net Earnings (Before Federal Taxes & Depreciation)	195,623 97	22
Federal Taxes	22,980 79	2
Depreciation	11,777 61	1
Net Gasoline Earnings	160,865 57	18

HIGHTOWER EXHIBIT No. Z

Gasoline Earnings by Months for Year 1924

ruary	March	April	May	June	July	August	September	October	November	December
932 46	357,974 93	183,568 81	191,080 74	112,854 72	75,541 22	80,112 20	104,620 19	101,190 52	133,428 50	179,787 11
175 89	81,109 74	80,882 53	60,256 79	47,508 85	38,635 63	45,669 75	52,092 81	64,199 57	69,067 02	76,893 51
017 49	5,793 90	5,955 60	6,199 24	5,955 75	4,827 89	6,889 69	5,501 23	5,742 74	6,140 77	5,929 92
978 21	1,975 71	1,983 17	1,974 84	1,977 34	1,979 60	1,979 14	1,981 16	1,989 41	1,848 27	874 15
023 49	2,871 20	2,874 17	2,871 20	2,584 08	2,863 96	2,857 62	2,857 62	2,857 62	2,857 62	2,857 62
643 73	33,537 51	31,944 98	22,551 66	13,626 76	8,779 42	9,499 81	11,984 38	13,612 58	16,023 46	20,768 26
838 81	125,288 06	123,640 45	93,853 73	71,652 78	57,086 50	66,896 01	74,417 20	88,411 92	95,937 14	107,323 46
693 65	232,686 87	59,928 36	97,227 01	41,201 94	18,454 72	13,216 19	30,202 99	12,778 60	37,491 36	72,463 65
039 50	27,613 66	6,018 84	10,681 17	3,678 04	834 64	179 82	2,303 17	125 12	3,214 22	7,585 76
777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61
276 54	193,295 60	42,131 91	74,768 23	25,746 29	5,842 47	1,258 76	16,122 21	875 87	22,499 33	53,100 28

Davenport O. & G. Co. (Pur. of Property)	145,000 00		
		*2,387,000 00	
Year 1917:			2,957,000 00
A. B. Leach & Co., New York	370,000 00		
		*1,455,000 00	
Year 1919:			1,825,000 00
Bonds		25,000 00	
Year 1921:			25,000 00
Bonds		#2,000,000 00	
Year 1923:			2,000,000 00
Virginian Gaso. & Oil Co., Charleston	300,000 00		
New York Banks, New York	1,250,000 00		
Year 1924:			1,550,000 00
Virginian Gaso. & Oil Co., Charleston	300,000 00		
		*23,000 00	
			323,000 00
Total			12,525,750 00

*First Mortgage 6% 20 Year Sinking Fund Gold Bonds.
#7½% Secured Gold Bonds.

(Here follows Hightower Exhibit No. Z marked side folio page 1240.)

[fol. 1241] WALLACE EXHIBIT No. 1

Supplemental Agreement Between United Fuel Gas Company & Hope Natural Gas Company, Dated October 31, 1923

[fol. 1242] This agreement, made and entered into this 31st day of October, A. D. 1923, by and between the United Fuel Gas Company, a corporation of West Virginia, (hereinafter called the "Selling Company", party of the first part, and Hope Natural Gas Company, a corporation of West Virginia, (hereinafter called the "Buying Company"), party of the second part;

Witnesseth: That whereas, by a certain written agreement bearing date the 25th day of August, 1916, between the parties hereto, the "Selling Company" agreed to sell and the "Buying Company" agreed to purchase certain quantities of natural gas to be delivered by the "Selling Company" to the "Buying Company" at a point near Cedarville, in Gilmer County, West Virginia, to which point the "Selling Company" agreed to construct a pipe line from its gas fields for the purpose of said agreement which pipe line has since been constructed and natural gas delivered under said agreement since early in the year 1917 until the present time, and

Whereas, certain of the terms, conditions and provisions of the said original agreement of August 25th, 1916, have been changed and modified by an agreement made and entered into by and between the parties hereto bearing date the 1st day of May, 1920, and also by an agreement made and entered into by and between the parties hereto bearing date the 7th day of August, 1922, and

Whereas, the parties hereto have agreed upon a modification of certain of the conditions contained in the said original agreement of August 25th, 1916, relating to the price which shall be paid for the gas delivered during the period hereinafter set forth.

Now, therefore, in consideration of the premises, it is agreed by and between the parties hereto,

First: In lieu of the prices specified in said original and supplemental agreements to be paid by the "Buying Com-

pany" to the "Selling Company," the "Buying Company" will pay for all daily deliveries of gas delivered to it between midnight of July 31st, 1923, and midnight of July 31st, 1924, at the rates and prices following, that is to say: for the first ten (10) million cubic feet per day, 21 cents per thousand cubic feet; for the eleventh million, 22 cents per thousand cubic feet; for the twelfth million, 23 cents per thousand cubic feet; for the thirteenth million, 24 cents per thousand cubic feet; for the fourteenth million, 25 cents per thousand cubic feet for the fifteenth million, 26 cents per thousand cubic feet; for the sixteenth million, 27 cents per thousand cubic feet; for the seventeenth million, 28 cents per thousand cubic feet; for the eighteenth million, 29 cents per thousand cubic feet; for the nineteenth million and all in excess thereof delivered each day, 30 cents per thousand cubic feet, which said rates and prices the "Selling Company" convenants and agrees to accept.

Second. It is further agreed that the said written agreements bearing date respectively, the 25th day of August, 1916, the 1st day of May, 1920, and the 7th day of August, 1922, between the parties hereto, are and shall remain in full force and effect in all of their terms, provisions and stipulations except as hereinbefore expressly modified.

[fol. 1243] Witness the common and corporate seals of the parties hereto duly affixed and attested by their proper officers the day and year first above written.

United Fuel Gas Company, by H. A. Wallace, Vice-President. Attest: M. S. Fouts, Secretary. (Seal.)
Hope Natural Gas Company, by Jno. B. Corrin, Vice President. Attest: S. E. W. Burnside, Secretary. (Seal.)

State of West Virginia,
County of Kanawha, ss:

I, D. C. Jay, a Notary Public of said County of Kanawha, do certify that H. A. Wallace personally appeared before me in my said County and being by me duly sworn, did depose and say that he is the Vice President of the United

Fuel Gas Company, one of the corporations described in the writing above, bearing date the 31st day of October, A. D. 1923, authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, and that the seal affixed to the said writing is the corporate seal of said corporation, and that the said writing was signed and sealed by him in behalf of said corporation by its authority duly given. And the said H. A. Wallace acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and official seal this 12th day of November, A. D. 1923.

D. C. Jay, Notary Public. My commission expires March 2, 1925. (Seal.)

[fol. 1244] State of Pennsylvania,
County of Allegheny, ss:

I, Geo. A. Kinley, a Notary Public of said County of Allegheny, do certify that Jno. B. Corrin personally appeared before me in my said County, and being by me duly sworn, did depose and say that he is the Vice President of Hope Natural Gas Company, one of the corporations described in the writing above, bearing date the 31st day of October, A. D. 1923, authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, and that the seal affixed to said writing is the corporate seal of said corporation, and that the said writing was signed and sealed by him in behalf of said corporation by its authority duly given. And the said Jno. B. Corrin acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and official seal this 14th day of November, A. D. 1923.

Geo. A. Kinley, Notary Public. My commission expires March 25, 1925. (Seal.)

[fol. 1245] WALLACE EXHIBIT No. 2.

Supplemental Agreement Between United Fuel Gas Company & Pittsburgh & West Virginia Gas Company, Dated November 12, 1923

[fol. 1246] This agreement, made this 12th day of November, A. D. 1923, by and between the United Fuel Gas Company, a corporation of West Virginia, hereinafter called "United Company," party of the first part, and the Pittsburgh and West Virginia Gas Company, also a West Virginia corporation, hereinafter called "Pittsburgh Company," party of the second part,

Witnesseth

That whereas by certain agreement dated the 25th day of August, 1916, between the parties hereto, United Company agreed to sell to Pittsburgh Company and deliver to it at a point near Cedarville, Gilmer County, West Virginia, certain quantities of natural gas, and Pittsburgh Company agreed to purchase the same upon the terms and conditions therein agreed upon, which contract is now in effect between the parties, and certain quantities of natural gas have been and are now being delivered and accepted thereunder; and

Whereas by certain supplemental agreements the price to be paid for gas delivered under the above contract has been from time to time changed; and whereas the United Company now requests the Pittsburgh Company to increase the price to be paid for gas under said agreement for the year beginning August 1, 1923, and has agreed to expend money enlarging its producing capacity and increasing the delivery of gas to Pittsburgh Company, which the Pittsburgh Company is willing to agree to upon certain conditions.

Now, therefore, this agreement witnesseth: That in consideration of mutual covenants and agreements herein contained, the parties hereto agree with each other as follows:

The Pittsburgh Company agrees that it will pay

First. For all gas delivered to it by the United Company under the terms of the contract of August 25th, 1916, for

the period beginning August 1, 1923 and ending July 31st, 1924, at the following rates, which are in lieu of the rates agreed upon under said contract and supplemental contracts for the period above mentioned only:

For the fifteenth million cubic feet per day, at the rate twenty-one cents per thousand cubic feet.

For the eleventh million cubic feet per day, at the rate of twenty-two cents per thousand cubic feet.

For the twelfth million cubic feet per day, at the rate of twenty-three cents per thousand cubic feet.

For the thirteenth million cubic feet per day, at the rate of twenty-four cents per thousand cubic feet.

For the fourteenth million cubic feet per day, at the rate of twenty-five cents per thousand cubic feet.

For the fifteenth million cubic feet per day, at the rate of twenty-six cents per thousand cubic feet.

For the sixteenth million cubic feet per day, at the rate of twenty-seven cents per thousand cubic feet.

For the seventeenth million cubic feet per day, at the rate of twenty-eight cents per thousand cubic feet.

[fol. 1247] For the eighteenth million cubic feet per day, at the rate of twenty-nine cents per thousand cubic feet.

For the nineteenth million cubic feet per day, and for all gas in excess of nineteen million cubic feet per day, at the rate of thirty cents per thousand cubic feet.

It is understood and agreed by the parties hereto that the increased rate herein agreed upon shall be effective only as to gas delivered between midnight on the 31st day of July, 1923 and midnight on the 31st day of July, 1924, and that thereafter the rate for gas delivered shall be the rate fixed under said contract of August 25, 1916.

Second. In consideration of the payment by Pittsburgh Company of the increased rate or price for gas above agreed upon, United Company agrees to make certain expenditures in order to increase its production and its supply of gas to Pittsburgh Company during the winter months of said year.

Third. Except as herein modified, all the terms and conditions of the said agreement of August 25, 1916 are and shall remain in full force and effect between the parties,

and the said terms and conditions, as well as the terms and conditions of this agreement, shall extend to the successors and assigns of the parties.

In witness whereof the parties hereto have caused their respective corporate seals to be hereto affixed and duly attested, the day and year first above written.

United Fuel Gas Company, by H. A. Wallace, Vice-President. Attest: M. S. Fouts, Secretary. (Seal.) Pittsburgh & West Virginia Gas Company, by A. Hurlburt, Vice President. Attest: W. W. Washabaugh Asst. Secretary. (Seal.)

[fol. 1247½] State of West Virginia,
County of Kanawha, To wit:

I, D. C. Jay, a Notary Public of said County of Kanawha, do certify that H. A. Wallace, personally appeared before me in my said County, and being by me duly sworn according to law, did depose and say that he is the Vice President of the United Fuel Gas Company, one of the corporations described in the foregoing writing, bearing date the 12th day of November, 1923, authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, and that the seal affixed to said writing is the corporate seal of said corporation, and that said writing was signed and sealed by him in behalf of said corporation by its authority duly given. And the said H. A. Wallace acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and notarial seal, this 12th day of November, A. D. 1923.

D. C. Jay, Notary Public. My Commission expires March 2, 1925. (Seal.)

State of Pennsylvania,
County of Allegheny, To wit:

I, John L. Hauser, a Notary Public of said County of Allegheny, do certify that A. Hurlburt personally appeared before me in my said County, and being by me duly sworn according to law, did depose and say that he is the Vice

President of the Pittsburgh & West Virginia Gas Company, one of the corporations described in the foregoing writing, bearing date the 12th day of November, 1923, authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, that the seal affixed to said writing is the corporate seal of said corporation, and that said writing was signed and sealed by him in behalf of said corporation by its authority duly given; and the said A. Hurlburt acknowledged the said writing to be the act and deed of said corporation.

Given under by hand and notarial seal this 12th day of November A. D. 1923.

John L. Hauser, Notary Public. My commission expires March 7, 1925. (Seal.)

[fol. 1248] WALLACE EXHIBIT No. 3

United Fuel Gas Company

Amount Collected as Minimum Charges, Year 1923, in City of Charleston, W. Va., Domestic Only

Month	Minimum charges	Total payments
January	$77 80	$89,713 05
February	78 40	81,708 15
March	101 85	75,259 83
April	124 20	60,634 33
May	279 28	34,067 60
June	618 81	21,466 74
July	807 52	19,237 20
August	868 89	19,115 95
September	608 73	21,987 19
October	277 60	35,873 83
November	96 95	66,584 62
December	96 75	69,456 63
Total	4,036 78	595,105 12
Per cent minimum charge of total payments		0 678%

[fol. 1249] WALLACE EXHIBIT No. 4

United Fuel Gas Company

Amount of Gas Purchased, Year 1923 and Eleven Months of 1924

	1923, M c. f.	11 mo 1924, M c. f.
Anderson Oil & Gas Co	64,345	36,366
Barnhart & Taylor #177		117,818
Barnhart & Taylor #188	185,317	118,440
Blackshere Oil & Gas Co	148,353	111,625
Belvard Oil & Gas Co	206,489	175,652
Byrne, W. E. R	25,658	15,487
Carter Oil Co	79,954	67,360
Cassis & Namay	17,857	13,246
Central Wayne Oil & Gas Co	96,390	71,931
Charleston Clendenin Oil & Gas Co.	122,163	99,070
Columbian Carbon Co	20,719	17,716
Cabot, G. L		65,938
Carte & Shaffer		2,548
Davis & Davis	22,321	30,504
Davis & Davenport	11,797	27,432
Davis, L. G	370,179	601,897
East Lynn Oil & Gas Co	48,117	34,321
Elkins, Richard	875,284	850,966
Empire Petroleum Co	744,544	559,565
Falling Rock Cannel Coal Co	985,757	810,028
Frazier, J. E. et al	425,054	312,985
Gassoal Oil Co	339,507	180,380
Goshorn Oil Co	18,247	28,134
Jackson Co., J. O	234,769	383,560
Kanawha City Oil & Gas Co	607,282	443,928
Miller, Jeff et al	20,764	30,915
Meteor Carbon Co	137,276	129,215
Morley Oil & Gas Co		81,070
McCray, D. D	2,593	1,296
McCormick, Millson	47,251	46,868
Ohio Fuel Oil Co	999,156	922,662
Pilgrim Oil Co	42,626	16,297
Priddie Oil & Gas Co	76,808	60,995
Poca Fork Oil & Gas Co		43,420
Coal State Gas Co		4,892

WALLACE EXHIBIT No. 4—Continued

	1923 M c f	11 mo 1924 M c f
Shelton Gasoline Co	318,886	2,943
South Penn Oil Co	166,080	72,942
Stonewall Oil & Gas Co	53,154	34,274
Silman, Peter	59,503	30,132
Sahley & Skaff	106,633	87,334
Summers, Earl		22,405
Turley, C. J	46,480	27,979
Transylvania Oil & Gas Co	494,870	707,776
Walker Oil Co	29,391	122,048
Weideman, Carl J	68,666	50,627
Williamson & Carnes	205,272	134,983
Waldron, M. H	114,999	97,887
Westova Oil & Gas Co	200,855	153,012
Davis, L. G. #197		93,137
Jackson, J. O. #199		10,370
Davis & Davis—Porters		14,959
Murphy, John	38,944	34,698
Pilgrim Oil Co. Ky	15,370	26,385
Union Gas & Oil Co	673,087	783,236
Big Darby Oil & Gas Co		24,229
O'Connell Oil Co	87,896	
Rogers, A. M	5,072	
Welsh & Loman	6,292	
Total	9,667,857	9,045,884

[fol. 1256] PEIRCE EXHIBIT No. 1

Public Gas Corporation

Investment Expenditures, Two Years Ended April 30, 1924

Physical Property:		
Drilling and Development	$138,631 36	
Machinery and Equipment	18,859 87	
Pipe Lines	30,791 70	
Compressor Plant	55,663 22	
Miscellaneous	651 80	
Superior Oil & Gas Co.—Wells	123,500 00	
Total Physical Property		$368,097 95

PEIRCE EXHIBIT No. 1—Continued

Investment Leases:		
Superior Oil & Gas Co.—Leases	118,500 00	
Leases	1,053 21	
Total Leases		119,553 21
Total Investment		487,651 16
Engineering & Superintendence	13,511 38	3 66%
Administration	12,689 74	3 45
Interest on Physical Property	41,226 97	11 20
Pre-Construction Costs	20,896 67	5 68
Legal Expense	14,796 38	4 02
Insurance & Taxes	5,329 34	1 45
Cost of Financing	25,887 43	7 03
Total	$134,337 91	36 50%
Interest on Leases Purchased	13,350 96	11 20%

[fol. 1251] JAY EXHIBIT 3 J. C. No. 1

Unoperated fee gas acreage held by United Fuel Gas Company:		
Calhoun County	4 07	
Clay County	8,116 65	
Jackson County	26 16	
Kanawha County	5,221 38	
Mingo County	787 87	
Roane County	12,980 83	
Wayne County	11,008 00	
		38,144 96
Operated fee gas acreage held by United Fuel Gas Company:		
Clay County	589 00	
Jackson County	32 25	
Kanawha County	339 81	
Mingo County	490 00	
Roane County	2,147 05	
		3,410 11
Grand Total		41,555 07

[fol. 1252] Unoperated Acreage Held under Lease at Delay Rental of 25 Cents per Acre

Counties	Number of leases	Acreage as to gas well royalties $50.00	$100.00	$150.00	$200.00	$250.00	$300.00
Kanawha	1						
	3	250				2,080	

[fol. 1253] Unoperated Acreage Held under Lease at Delay Rental of 50 Cents per Acre

Counties	Number of leases	Acreage as to gas well royalties $100.00	$150.00	$200.00	$250.00	$300.00
Boone	9					
	4			834 00		
Clay	7					599 00
	1			400 75		
Kanawha	4	403				22 40
	1					
	8		417			35 00
	7			394 50		
Lincoln	1			109 50		
Mason	47					5,369 00
Raleigh	36					4,387 70
Wayne	1			40 00		
Roane	1	60				
		463	417	1,778 75		10,413 10

Jay Exhibit 3 J. C. No. 1—Continued

[fol. 1254] Unoperated Acreage Held under Lease at Delay Rental of 75 Cents per Acre

Counties	Number of leases	Acreage as to gas well royalties $125.00	$150.00	$200.00	$250.00	$300.00
Kanawha	1	1,221				
	2				8,697	

[fol. 1255] Unoperated Acreage Held under Lease at Delay Rental of $1.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties $100.00	$150.00	$200.00	$250.00	$300.00
Boone	3			3,664		
	2				136	
	44					30,663 75
Cabell	218					18,330 51
	15			1,038 50		
	3				483	
Clay	8			9,151 50		
	1				100	
	143					20,270 36
Braxton	6					863 00
Fayette	1					4,000 00

Jackson	22		1,690 00		
	8			704	
	380				36,120 00
Kanawha	2	42			
	100		46,463 00		
	37			8,248½	
	4				45,611 75
Lincoln	4		312 00		
	2			110 00	
	7				992 00
Logan	31				3,304 00
Mingo	21				2,724 75
	39		6,053 20		
Nicholas	15				1,431 00
Putnam	10		671 00		
	265				22,135 42
	4			466 00	
Raleigh	1		225 00		
Wayne	39				2,998 00
Wirt	21				1,325 00
Roane	125				9,150 07
	4			730 00	
		42	69,268 20	10,977 50	199,922 61

Jay Exhibit 3 J. C. No. 1—Continued

[fol. 1256] Unoperated Acreage Held under Lease at Delay Rental of $1.50 per Acre

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$150.00	$200.00	$250.00	$300.00
Boone	1					66 25
Clay	1			50		
Kanawha	4			26		
	3					400 00
Lincoln	15					1,091 00
				76 00		1,557 25

[fol. 1257] Unoperated Acreage Held under Lease at Delay Rental of $2.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$150.00	$200.00	$250.00	$300.00
Cabell	2					137 50
Clay	3			433 03		
	14					581 67
Jackson	1				7 00	
	9					325 61
Kanawha	11			280 00		
	2				250 00	
	17					1,099 75
Lincoln	7					230 75

Logan	1					
Mingo	3		7 68			8 00
Roane	41					
	1					2,251 86
	1	250 00		95 00		
		250 00	7 68	808 03	257 00	4,635 14

[fol. 1258] Unoperated Acreage Held under Lease at Delay Rental of $2.50 per Acre

		Acreage as to gas well royalties				
Counties	Number of leases	$100 00	$150 00	$200 00	$300 00	$500 00
Kanawha	1					
Roane	3				17 25	1,600 00

[fol. 1259] Unoperated Acreage Held under Lease at Delay Rental of $3.00 per Acre

		Acreage as to gas well royalties		
Counties	Number of leases	$200 00	$250 00	$300 00
Kanawha	7	24 25		
Roane	1		5 00	
	12			746 46

[fol. 1260] Unoperated Acreage Held under Lease at Delay Rental of $4.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties, $300.00
Roane	5	679 67

Jay Exhibit 3 J. C. No. 1—Continued

[fol. 1291] Unoperated Acreage Held under Lease at Delay Rental of $5.00 per Acre

County	Number of leases	Acreage as to gas well royalties $200.00
Roane	6	24.00
Kanawha	4	3.50
	3	18.50
		46.00

[fol. 1292] Unoperated Acreage Held under Lease at Delay Rental of $10.00 per Acre

County	Number of leases	Acreage as to gas well royalties $200.00
Clay	2	1.50
Kanawha	5	10.00
Roane	5	47.00
		58.50

[fol. 1293] Unoperated Acreage Held under Lease at Delay Rental of $20.00 per Acre

County	Number of leases	Acreage as to gas well royalties $200.00
Roane	3	10.00

[fol. 1264] Unoperated Acreage Held under Lease at Delay Rental of $40.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties	
		$250.00	$300.00
Kanawha	2		1 50
	1	50	

[fol. 1265] Unoperated Acreage Held under Lease at Delay Rental of $100.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$150.00	$200.00	$250.00	$300.00
Jackson	2					3 00
Kanawha	1					4 75
	4			97 75		
	11					75 75
Roane	1				1 50	
	1				40 50	
	22					821 80
				97 75	42 00	905 30

JAY EXHIBIT 3 J. C. No. 1—Continued

[fol. 1266] Unoperated Acreage Held under Lease at Delay Rental of $150.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$150.00	$200.00	$250.00	$300.00
Jackson	17		320 30			
	2			15 50		
	2				11 50	
	17					317 75
Kanawha	9		83 45			
	22					317 95
Clay	4					108 50
Roane	7					174 50
			473 75	15 50	11 50	918 70

[fol. 1267] Unoperated Acreage Held under Lease at Delay Rental of $200.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties			
		$150.00	$200.00	$250.00	$300.00
Clay	2				59 00
Jackson	1			94	
	1				58 00
Kanawha	8				

Roane	18		204 00		
	12		325 50		502 04
	3				
	54			71 00	
					1,398 78
			529 50	71 94	2,617 82

[fol. 1268] Unoperated Acreage Held under Lease at Delay Rental of $250.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties			
		$100.00	$200.00	$250.00	$300.00
Jackson	1			19 00	
Kanawha	1		47 25		
	4			139 34	
Roane	13				636 68
	9		365 62		
	15				804 30
			412 87	158 34	1,440 98

[fol. 1269] Unoperated Acreage Held under Lease at Delay Rental of $300.00 per Tract

Counties	Number of leases	$200.00	$250.00	$300.00
Clay	1	40 00		
Jackson	8			367 00
	87			4,485 00
	1		4 00	

JAY EXHIBIT 3 J. C. No. 1—Continued

Counties	Number of leases	Acreage as to gas well royalties		
		$200.00	$250.00	$300.00
Kanawha	2	245 00		
	2		156 00	
	139			5,766 14
	5 Lots			5 Lots
Lincoln	1	60 00		
Putnam	1			70 00
Roane	2			86 00
	592			17,654 85
	4		316 00	
		345 00	476 00	28,428 99
				5 Lots

[fol. 1270] Unoperated Acreage Held under Lease at Delay Rental of $250.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties			
		$100.00	$200.00	$250.00	$300.00
Roane	2				164 00

[fol. 1271] Unoperated Acreage Held under Lease at Delay of Rental of $400.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$200.00	$250.00	$300.00	$400.00
Jackson	1					10 22
Kanawha	11				1,022 29	

Roane	19		1,634 85	
			2,657 14	10 22

[fol. 1272] Unoperated Acreage Held under Lease at Delay Rental of $500.00 per Tract

Counties	Number of acres	Acreage as to gas well royalties			
		$100.00	$200.00	$250.00	$300.00
Roane	9				1,418 00

[fol. 1273] Unoperated Acreage Held under Lease at Delay Rental of $600.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties, $300.00
Jackson	9	1,696 00
Kanawha	1 Tract	97 00
Roane	30 Tracts	4,364 25
		6,157 25

[fol. 1274] Unoperated Acreage Held under Lease at Delay Rental of $900.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties			
		$100.00	$200.00	$250.00	$300.00
Roane	2	.....	.....	.....	529 00

JAY EXHIBIT J. C. No. 1—Continued

[fol. 1275] Unoperated Acreage Held under Lease at Delay Rental of $1,000.00 per Tract

County	Number of leases	Acreage as to gas well royalties $200.00
Kanawha	1	200.00
Roane	1	18.75
		218.75

[fol. 1276] Unoperated Acreage Held under Lease at Delay Rental of $1,300.00 per Tract

County	Number of leases	Acreage as to gas well royalties $200.00
Roane	2	706.69

[fol. 1277] Unoperated Acreage Held under Lease at Delay Rental of 50 Cents per Acre

County	Number of acres	Acreage as to gas well royalties 12½ per M
Raleigh	2	280.44

[fol. 1278] Unoperated Acreage Held under Lease at Delay Rental of $2.00 per Acre

County	Number of leases	Acreage as to gas well royalties			
		1/16 per M	1/8 per M	1/6 per M	1/5 per M
Boone	1			3,000.00	
Lincoln	1				770.00

Fayette	1				
Jackson	1			709 36	
Nicholas	1		417 25		
Putnam	4				9,938 30
Boone	1	6,515 00			365 00
		6,515 00	417 25	3,709 36	11,073 30

[fol. 1279] Unoperated Acreage Held under Lease at Delay Rental of $3.00 per Acre

County	Number of leases	Acreage as to gas-well royalties 8/16 per M
Clay	2	864 56
	1	84 10
		948 66

[fol. 1280] Unoperated Acreage Held under Lease at Delay Rental of $5.00 per Acre

County	Number of leases	Acreage as to gas-well royalties 1/8 per M	Acreage as to gas-well royalties 1/6 per M
Kanawha	2	1,159 50	
	1		116 00

1067

JAY EXHIBIT 3 J. C. No. 1—Continued

[fol. 1281] Acreage Held under Lease Without Rental on Account of Oil Production

County	Number of acres	Acreage as to gas well royalties
Kanawha	2	125.00 A. at $50.00 per well.
Roane	1	50.00 A. " 50.00 " "
Kanawha	21	1,228.25 A. " 100.00 " " 175 A. @ $50.00
Lincoln	5	530.00 A. " 100.00 " "
Roane	32	4,008.00 A. " 100.00 " " 5,856.25 A. @ $100.00
Jackson	2	70.00 A. " 150.00 " "
Kanawha	13	412.25 A. " 150.00 " "
Roane	5	381.25 A. " 150.00 " " 863.50 A. @ $150.00
Jackson	6	698.00 A. " 200.00 " "
Kanawha	60	9,186.75 A. " 200.00 " "
Lincoln	10	1,207.00 A. " 200.00 " "
Roane	49	6,204.10 A. " 200.00 " " 28,163.85 A. @ $200.00
Jackson	1	9.38 A. " 250.00 " "
Kanawha	13	29,494.00 A. " 250.00 " "
Lincoln	1	51.00 A. " 250.00 " "
Roane	64	6,079.00 A. " 250.00 " " 35,633.44 A. @ $250.00
Jackson	10	260.00 A. " 300.00 " "
Kanawha	25	6,817.75 A. " 300.00 " "
Clay	1	1,049.50 A. " 300.00 " "
Lincoln	7	754.00 A. " 300.00 " "
Roane	68	1,970.37 A. " 400.00 " " 10,851.52 A. @ $300.00
Kanawha	9	704.00 A. " 400.00 " " 704.00 A. @ $400.00

[fol. 1282]

Operated Acreage Held under Lease on Account of Gas Operation

Counties	Number of leases			Acreage as to gas well royalties
Kanawha	5	174 72 A. @	$50 00 per well.	174 72 A. @ $50 00
Logan	1	450 00 A. "	100 00 " "	
Mingo	6	1,025 00 A. "	100 00 " "	
Kanawha	17	1,538 25 A. "	100 00 " "	3,013 25 A. @ $100 00
	1	400 00 A. "	125 00 " "	400 00 A. @ $125 00
Boone	5	1,912 00 A. "	150 00 " "	1,912 00 A. @ $150 00
Clay	2	916 00 A. "	200 00 " "	
Jackson	4	550 00 A. "	200 00 " "	
Lincoln	18	2,324 00 A. "	200 00 " "	
Logan	1	415 00 A. "	200 00 " "	
Putnam	2	2,396 00 A. "	200 00 " "	
Wayne	1	184 00 A. "	200 00 " "	
Kanawha	2	42 00 A. "	200 00 " "	
Boone	53	3,557 00 A. "	200 00 " "	10,784 00 A. @ $200 00
Clay	2	296 00 A. "	300 00 " "	
Jackson	3	279 00 A. "	300 00 " "	
Lincoln	12	1,133 75 A. "	300 00 " "	
Logan	1	100 00 A. "	300 00 " "	
Putnam	2	313 50 A. "	300 00 " "	
Kanawha	1	100 00 A. "	300 00 " "	
	51	4,046 75 A. "	300 00 " "	6,179 00 A. @ $300 00
	2	347 00 A. "	350 00 " "	347 00 A. @ $350 00
	6	1,843 00 A. "	400 00 " "	1,843 00 A. @ $400 00
	4	679 35 A. "	450 00 " "	679 35 A. @ $450 00

JAY EXHIBIT 3 J. C. No. 1—Continued

Counties	Number of leases	Acreage as to gas well royalties			
Kanawha	5	771 00 A.	at	500 00	per well 771 00 A. @ $500 00
	2	115 18 A.	"	550 00	" " 115 18 A. @ $550 00
Jackson	2	285 00 A.	"	600 00	" "
Kanawha	5	595 00 A.	"	600 00	" " 880 00 A. @ $600 00
	1	368 00 A.	"	900 00	" " 368 00 A. @ $900 00
	3	1,938 00 A.	"	1,000 00	" " 1,938 00 A. @ 1,000 00
	2	1,710 00 A.	"	1,250 00	" " 1,710 00 A. @ 1,250 00

[fol. 1283] Unoperated Acreage Held under Lease at Delay Rental of $1.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties
Boone	1	5,733 81 acres @ 3/4¢ per M.
	1	8,724 00 " " 5/8¢ per M.
	1	33 00 " " 1¢ per M.
Jackson	1	165 00 " " 1 1/2¢ per M.
Kanawha	1	500 00 " " 5/8¢ per M.
	4	29,290 00 " " 1 1/2¢ per M.
	1	109 00 " " 1¢ per M.
	1	2,000 00 " " 1/8¢ per M. Gas
Raleigh	2	48,172 15 " " 1 1/2¢ per M.

5,733 81 A. @ 3/4¢ per M.	500 00 " " 5/8¢ per M.	
8,724 00 " " 5/8¢ per M.	109 00 " " 1¢ per M.	
33 00 " " 1¢ per M.	2,000 00 " " 1/8¢ per M.	
77,660 15 " " 1 1/2¢ per M.		

LEASE No.....

OIL AND GAS LEASE

FROM

.....

.....

TO

.....

Incorporated

Date..... 192..

Term of Years.....

No. Acres.....

On the Waters of.....

District.....

County.....

State of.....

Received.....

at..... O'clock, ...M

Recorded..... 192....

in.....County, ...

Record of Leases, Vol.....Page.....

.....

Recorder.
County Clerk.

Clerk's Fee, $.....

Recorder's Fee, $.....

U. L. D. 141 1M 11-24

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____heirs or assigns, free of cost in tanks or the pipe line to which said lessee may connect its wells, a royalty of_____the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay, in lieu of the customary annual rental for the use of gas from gas wells, a royalty or compensation, for all gas taken by the lessee from the above described premises (other than casinghead gas from oil wells), of one (1) cent per thousand cubic feet, said gas to be measured by orifice or other meter of standard type, and the volume of the same computed on a ten (10) ounce pressure basis above 14.7 pounds atmospheric; and when measured through orifice or pitot tube, computation of the same shall be based on a temperature of forty (40) degrees (Fahrenheit) flowing and fifty (50) degrees storage, according to Boyle's Law for the measurement of gas at varying pressures, but without allowance for changes in temperature and barometric conditions from the aforesaid basis. Payment of the amount due, at the rate aforesaid, for such gas shall be made on or before the twentieth (20th) day of each month for the gas taken during the preceding month, and such payment shall constitute the entire consideration to the lessor for such gas, including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of_____

($_____) Dollars, quarterly in advance, beginning in_____months from this date, until, but not after a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege.

Payment of all moneys herein named or due under this lease may be made by cash or check to_____

_____, or by deposit to_____credit in the_____

_____Bank of_____, or by check made payable to_____

order and mailed to_____at_____P. O._____

County, State of_____, who is hereby appointed Agent of the parties of the first part for such purposes.

Lessor may lay a line to any gas well on said land and take gas produced from said well for_____own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first two hundred thousand cubic feet of gas so taken each year shall be free, but all gas in excess of two hundred thousand cubic feet taken in each year shall be paid for by the lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

_____

_____

_____

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be full surrender and termination of this lease.

AGREEMENT, Made and entered into the.....day of....., A. D. 192.....

by and between.....

.....

.....

.....

.....

of.....County of..... and State of.....

part..... of the first part hereinafter called the Lessor and the.....
a West Virginia Corporation party of the second part hereinafter called the Lessee.

WITNESSETH That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise unto the said Lessee for the purpose of mining and operating for oil and gas, and of laying pipe lines, and building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and separately and neighboring lands, ALL that certain tract of land situate in.....

District..... County and State of West Virginia, on the waters of .....bounded substantially as follows:

On the North by lands of.....

On the East by lands of.....

On the South by lands of.....

On the West by lands of.....

Containing.....acres, more or less, but no well shall be drilled by either party nearer than.....feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee for the production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, free of cost, in tanks or the pipe line to which said lessee may connect its

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

WITNESS:

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....

By.....Vice-President.

STATE OF WEST VIRGINIA,

COUNTY OF..... } to-wit:

I, ... a.....

of said county of.....do certify that.....

and.....his wife, whose name.....signed to the within writing,

bearing date the.....day of....., A. D., 19....., ha..... this day acknowledged the same before me in my said County.

Given under my hand this.....day of....., A. D., 19.....

My commission expires.....

.....

.....

STATE OF WEST VIRGINIA,

COUNTY OF..... } to-wit:

I, ... a.....

of said county of.....do certify that.....

and.....his wife, whose name.....signed to the within writing,

bearing date the.....day of....., A. D., 19....., ha..... this day acknowledged the same before me in my said County.

Given under my hand this.....day of....., A. D., 19.....

My commission expires.....

.....

.....

AGREEMENT, Made and entered into the _____ day of _____ A. D., 192__

by and between _____

of _____ County of _____ and State of _____

of the first part, hereinafter called the Lessor and the UNITED FUEL GAS COMPANY, a West Virginia Corporation, party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents do grant, demise, lease and let, with covenants of quite possession and sole right so to grant and demise, unto the said Lessee for the purpose of mining and operating for oil and gas, and of laying pipe lines, and building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in _____ District, _____ County, and State of West Virginia on the waters of _____

bounded substantially as follows:

On the North by lands of _____

On the East by lands of _____

On the South by lands of _____

On the West by lands of _____

Containing _____ acres, more or less, but no well shall be drilled by either party, except by mutual consent, within _____ feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from _____ and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost in tanks or the pipe line to which said lessee may connect its wells, a royalty of _____ the equal one-eight (⅛) part of all oil produced and saved from the leased premises; and, 2nd—to pay _____ a royalty of _____

($ _____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well then Lessee shall pay at the rate of twenty five dollars annually for the gas from each oil well so utilized.

STATE OF WEST VIRGINIA,

COUNTY OF _____ } **to-wit:**

I, _____, a _____

of said county of _____ do certify that _____

and _____ his wife, whose name _____ signed to the within writing bearing date the _____ day of _____ A. D. 19_____, ha_____ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____ A. D. 19_____

My commission expires _____

STATE OF WEST VIRGINIA,

COUNTY OF _____ } **to-wit:**

I, _____, a _____

of said county of _____ do certify that _____

and _____ his wife, whose name _____ signed to the within writing bearing date the _____ day of _____ A. D. 19_____, ha_____ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____ A. D. 19_____

My commission expires _____

the Lessor, ... heirs or assigns, free of cost in tanks or the pipe line to which said lessee may connect its wells, a royalty of ..... the equal one-eight (⅛) part of all oil produced and saved from the leased premises; and, 2nd—to pay ..... a royalty of .....

($ .....) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well then Lessee shall pay at the rate of twenty five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of .....

($ .....) Dollars, quarterly in advance, beginning in ..... months from this date, until, but not after a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege. This lease is not to go into effect or replace a prior lease dated ....., now held by the Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Payments of all moneys herein named or due under this lease may be made by cash or check to .....

..... or by deposit to ..... credit in the ..... Bank of ....., or by check made payable to ..... order and mailed to ..... at ..... P. O., ... County, State of ..... who is hereby appointed Agent of the parties of the first part for such purposes.

Lessee may lay a line to any gas well on said land and take gas produced from said well for ..... own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first two hundred thousand cubic feet of gas so taken each year shall be free, but all gas in excess of two hundred thousand cubic feet taken in each year shall be paid for by the lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

.....

.....

.....

.....

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that recordation of a deed of surrender in the proper county, and the mailing to the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The convenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

.....

.....

.....

.....

.....

.....

.....

.....

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

UNITED FUEL GAS COMPANY,

By .....

Vice President.

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 192 __, ha__ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____, A. D., 192 __

My commission expires _____

_____

_____

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 192 __, ha__ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____, A. D., 192 __

My commission expires _____

_____

_____

LEASE NO.

OIL AND GAS LEASE

FROM

TO

UNITED FUEL GAS COMPANY
INCORPORATED

Date 192

Term of Years .....

No. Acres .....

On the Waters of .....

District .....

County .....

State of .....

Received .....

at ..... O'clock. M.

Recorded 192

in ..... County.

Record of Leases, Vol. ..... Page .....

Recorder.
County Clerk.

Clerk's Fee, $ .....

Recorder's Fee, $ .....

Form U. L. D. 116 10-27 5575

1830

by and between.....

.....

.....

of.....County of.....and State of.....part.....
of the first part, hereinafter called the Lessor and the UNITED FUEL GAS COMPANY, a West Virginia Corporation, party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise, unto the said Lessee, for the purpose of mining and operating for oil and gas, and of laying pipe lines, and building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in.....

District, ...County, and State of West Virginia on the waters of.....
bounded substantially as follows:

On the North by lands of.....

On the East by lands of.....

On the South by lands of.....

On the West by lands of.....

Containing .....acres, more or less, but no well shall be drilled by either party, except by mutual consent, within.....feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term of payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, ... heirs or assigns, free of cost, in the pipe line to which said Lessee may connect its wells, a royalty of .....the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay.....a royalty of.....
($.....) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well while so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of.....

the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well while so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of..... .....

($.....) Dollars, quarterly in advance, beginning in.....months from this date, until, but not after, a well yielding royalty to the Lessor is drilled on the leased premises, any rental paid for them beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil and gas is produced.

It is agreed that said Lessee may drill or not drill on said land, as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege.

Payments of all moneys herein named or due under this lease may be made by cash or check to..... .....or by deposit to.....credit in the.....Bank of..... or by check made payable to.....order and mailed to..... at.....P. O. .....County, State of.....who is hereby appointed Agent of the parties of the first part for such purpose.

Lessor may lay a line to any gas well on said land and take gas produced from said well for.....own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first two hundred thousand cubic feet of gas so taken each year shall be free, but all gas in excess of two hundred thousand cubic feet taken in each year shall be paid for by the Lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

....

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises, and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that the recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

UNITED FUEL GAS COMPANY,

By.....

Vice President.

STATE OF WEST VIRGINIA,

COUNTY OF.....} to wit:

I, ..., a.....

of said County of.....do certify that.....

and.....his wife, whose name.....signed to the within writing,

bearing date the.....day of....., A. D. 192...., ha.....this day acknowledged the same before me in my said County.

Given under my hand this.....day of....., A. D. 192....

My commission expires.....

.....

.....

STATE OF WEST VIRGINIA,

COUNTY OF.....} to wit:

I, ..., a.....

of said County of.....do certify that.....

and.....his wife, whose name.....signed to the within writing,

bearing date the.....day of....., A. D. 192...., ha.....this day acknowledged the same before me in my said County.

Given under my hand this.....day of....., A. D. 192....

My commission expires.....

.....

.....

1038

LEASE No.

OIL AND GAS LEASE

FROM

TO

UNITED FUEL GAS CO.

Incorporated

Dated ..... 19....

Terms of Years.....

In Acres .....

In the Waters of.....

District .....

County.....

State of.....

Received.....

at.....O'clock .....M

Recorded..... 192....

in.....County.....

Record of Leases Vol..... Page.....

Recorder
County Clerk

Clerk's Fee $.....

Recorder's Fee. $.....

U. L. D. 134 2M 10-25

AGREEMENT, Made and entered into the _____ day of _____, A. D., 192____ by and between _____

_____

_____

of _____ County of _____ and State of _____ part _____ of the first part, hereinafter called the Lessor and _____ party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents do grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise, unto the said Lessee for the purpose of mining and operating for oil and gas, and of laying pipe lines, and building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in _____ District, _____ County, and State of West Virginia on the waters of _____ bounded substantially as follows:

On the North by lands of _____

On the East by lands of _____

On the South by lands of _____

On the West by lands of _____

Containing _____ acres, more or less, but no well shall be drilled by either party, except by mutual consent, within _____ feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st.—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost in the pipe line to which said lessee may connect its wells, a royalty of _____ the equal one-eighth (⅛) part of all oil produced and saved from the leased premises and, 2nd—to pay _____ a royalty of _____ ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of _____

premises and, 2nd—to pay ..... a royalty of .....

($.....) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of .....

($.....) Dollars, quarterly in advance, beginning in ..... months from this date, until, but not after, a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land, as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege.

Payments of all moneys herein named or due under this lease may be made by cash or check to .....

..... or by deposit to ..... credit in the ..... Bank

of ....., or by check made payable to ..... order and mailed

to ..... at ..... P. O., ... County,

State of ..... who is hereby appointed Agent of the parties of the first part for such purpose.

Lessor may lay a line to any gas well on said land and take gas produced from said well for ..... own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first two hundred thousand cubic feet of gas so taken each year shall be free, but all gas in excess of two hundred thousand cubic feet taken in each year shall be paid for by the Lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

.....

.....

.....

.....

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that the recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

..... (Seal)

..... (Seal)

..... (Seal)

..... (Seal)

..... (Seal)

..... (Seal)

By .....

Vice-President.

-69317-

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 192___, ha _____ this day acknowledged the same before
me in my said County.

Given under my hand this _____ day of _____, A. D., 192___

My commission expires _____

_____

_____

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 192___, ha _____ this day acknowledged the same before
me in my said County.

Given under my hand this _____ day of _____, A. D., 192___

My commission expires _____

_____

_____

LEASE NO.

AND GAS LEASE

FROM

TO

, 192

Years

Waters of

O'clock, M.

, 192

County,

of Leases, Vol. Page

Recorder.
County Clerk.

Fee, $

r's Fee, $

134½ 1M 7-22

Agreement, Made and entered into the _____ day of _____, A. D., 19____,
by and between _____

_____

_____

_____

of _____ County of _____ and State of _____,
part____ of the first part, hereinafter called the Lessor, and the UNITED FUEL GAS COMPANY, a West Virginia corporation, party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents do____ grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise, unto the said Lessee, for the purpose of mining and operating for oil and gas, and of laying pipe lines, and of building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in _____
District, _____ County, and State of West Virginia, on the waters of _____
_____ bounded substantially as follows:

On the North by lands of _____

On the East by lands of _____

On the South by lands of _____

On the West by lands of _____

Containing _____ acres, more or less, but no well shall be drilled by either party, except by mutual consent, within _____ feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost, in the pipe line to which said Lessee may connect its wells, a royalty of the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay a royalty of _____
_____ ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost, in the pipe line to which said Lessee may connect its wells, a royalty of the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay a royalty of _____ _____ ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of _____ ($_____) Dollars, quarterly in advance, beginning in _____ months from this date, until, but not after, a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land, as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege. This lease is not to go into effect or replace a prior lease, dated _____ now held by the Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

All payments hereunder may be made direct to the Lessor, or deposited to the credit of Lessor, in _____ _____, or by check payable and mailed to _____ at _____ Post Office, _____ County, State of West Virginia, or in any of said methods to _____, who is hereby appointed agent to receive and receipt for the same.

Lessor may lay a line to any gas well on said land and take gas produced from said well for _____ own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first one hundred fifty thousand cubic feet of gas so taken in each year shall be free, but all gas in excess of one hundred fifty thousand cubic feet taken in each year shall be paid for by the Lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

_____

_____

_____

_____

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that the recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be a full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

_____ _____ (Seal)

_____ _____ (Seal)

_____ _____ (Seal)

_____ _____ (Seal)

UNITED FUEL GAS COMPANY,

_____ By _____

_____

LEASE No. _____

OIL AND GAS LEASE

FROM

_____

_____

TO

UNITED FUEL GAS CO.

(Incorporated)

Date _____ 19__

Term of Years _____

No. Acres _____

On the Waters of _____

District _____

County _____

State of _____

Received _____

at _____ o'clock, ____ M.

Recorded _____, 19__

in _____ County, _____

Record of Leases, Vol. _____ Page _____

_____

Recorder,
County Clerk.

Clerk's Fee, $ _____

Recorder's Fee, $ _____

W. L. D. 191

Given under my hand this _____ day of _____, A. D., 19__

Given under my hand this _____ day of _____, A. D., 19__

My commission expires _____

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 19____, ha__ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____, A. D., 19____.

My commission expires _____

_____

_____

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 19____, ha__ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____, A. D., 19____.

My commission expires _____

Made and entered into the _____ day of _____, A. D., 19____,

by and between _____

_____

_____

_____

_____

of _____ County of _____ and State of _____,

part _____ of the first part, hereinafter called the Lessor, and _____

_____ party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents do _____ grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise, unto the said Lessee, for the purpose of mining and operating for oil and gas, and of laying pipe lines, and of building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in _____

District, _____ County, and State of West Virginia, on the waters of _____

_____ bounded substantially as follows:

On the North by lands of _____

On the East by lands of _____

On the South by lands of _____

On the West by lands of _____

Containing _____ acres, more or less, but no well shall be drilled by either party, except by mutual consent, within _____ feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost, in the pipe line to which said Lessee may connect his wells, a royalty of the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay a royalty of _____ _____, ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of his intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in his operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be freely used by the Lessee for farming purposes, excepting such acres as are

_____ ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of his intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in his operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of_____

($_____) Dollars, quarterly in advance, beginning in_____months from this date, until, but not after, a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land, as he may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege. This lease is not to go into effect or replace a prior lease, dated_____now held by the Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

All payments hereunder may be made direct to the Lessor, or deposited to the credit of Lessor, in_____, or by check payable and mailed to_____ at_____Post Office, _____County, State of West Virginia, or in any of said methods to_____, who is hereby appointed agent to receive and receipt for the same.

Lessor may lay a line to any gas well on said land and take gas produced from said well for_____own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first one hundred fifty thousand cubic feet of gas so taken in each year shall be free, but all gas in excess of one hundred fifty thousand cubic feet taken in each year shall be paid for by the Lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

_____

_____

_____

_____

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that the recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be a full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

_____ _____(Seal)

_____ _____(Seal)

_____(Seal)

_____ _____(Seal)

_____ _____(Seal)

LEASE No. _____

OIL AND GAS LEASE

FROM

_____

_____

TO

Date _____ 19__

Term of Years _____

No. Acres _____

On the Waters of _____

District _____

County _____

State of _____

Received _____

at _____ o'clock, _____ M.

Recorded _____ 19__

in _____ County, _____

Record of Leases, Vol. _____ Page _____

_____

Recorder,
County Clerk.

Clerk's Fee, $_____

Recorder's Fee, $_____

Given under my hand this _____ day of _____, A. D., 19__

My commission expires _____

hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a West Virginia Corporation, hereinafter called the Lessee;

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, on the part of the said party of the second part, to be paid, kept and performed, ha.... granted, demised, leased and let, and by these presents do.... grant, demise, lease and let unto the said party of the second part, its successors and assigns, for the sole and only purpose and with the exclusive right of mining and operating for oil and gas, and of using free of charge from any well thereon sufficient gas for drilling and operating upon the same, and of laying pipe lines, and of building tanks, stations and structures thereon, to take care of the said products, all that certain tract of land situate in.....District .....County, and State of West Virginia, on the waters of..... ....., bounded substantially as follows:

On the North by lands of.....
On the East by lands of.....
On the South by lands of.....
On the West by lands of.....
containing .....acres, more or less,
including lands conveyed to Lessor by.....
by deed dated....., and recorded in said County records in Deed Book..... page.....

TO HAVE AND TO HOLD said premises for the said purpose for and during the term of twenty (20) years from ....., and as long thereafter as oil or gas is produced from said land.

No well to be drilled within.....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of one-eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of..... Dollars ($.....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damage to growing crops on said land.

Lessor shall be entitled to use free of cost for heat and light in one dwelling on said premises from any gas well thereon.

premises, and to pay for each gas well while the gas is sold therefrom the sum of.....
Dollars ($.....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damage to growing crops on said land.

Lessor shall be entitled to gas free of cost for heat and light in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same, and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatsoever. Lessee is to have free of charge the waste and casing head gas from oil wells, and water from the premises to use on or off the said premises for its oil and gas operations, and the right to operate and maintain pipe lines and surface rods to and from adjoining lands, and Lessee shall have the right at any time to remove all machinery, material and fixtures which it may place on said premises.

This lease is not to go into effect or merge or replace a prior lease dated ....., now held on said land by said Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Lessee agrees to drill a well on said premises by.....
or pay to Lessor.....Dollars ($.....) each .....
thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any gas well rental. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the Bank herein below named the sum of.....Dollar..., and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returing it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the County Clerk's Office of.....County, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to.....
.....or by deposit to.....credit in the .....Bank
of ....., or by check made payable to.....order and mailed
to ..... at .....P. O., ...County,
State of..... who is hereby appointed Agent of the parties of the first part for such purpose.
.....
.....

This grant and demise, with all of its terms and conditions shall extend to and bind the respective heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, We, the parties hereto, have hereunto set our hands and seals the day and year first above written.

Witness:

.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)

Attest:

.....
Secretary.

UNITED FUEL GAS COMPANY,
(Incorporated)

By.....
President.

STATE OF WEST VIRGINIA }
COUNTY OF ..... } to-wit:

I, ... a

of said County of ..... do certify that .....

and ..... his wife, whose names are signed to the within writing, bearing

date the ..... day of ..... A. D. 19....., ha... this day acknowledged the

same before me in my said County.

Given under my hand and notarial seal this ..... day of ..... A. D. 19....

.....

.....

My Commission expires the ..... day of ..... A. D. 19....

STATE OF WEST VIRGINIA }
COUNTY OF ..... } to-wit

I, ... a

of said County of ..... do certify that .....

and ..... his wife, whose names are signed to the within writing, bearing

date the ..... day of ..... A. D. 19....., ha... this day acknowledged the

same before me in my said County.

Given under my hand and notarial seal this ..... day of ..... A. D. 19....

.....

.....

My Commission expires the ..... day of ..... A. D. 19....

No

GAS LEASE

From

To

FUEL GAS Co.

(Incorporated)

19

o'clock, M

19

County

, Vol Page

Recorder

County Clerk

$

$

THIS AGREEMENT, Made and entered into this ..... day of ....., A. D., 191...,

between .....

.....

.....

.

..... for the same purpose for the said term of twenty (20) years from

....., and as long thereafter as oil or gas is produced from said land.

No well to be drilled within ..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One Eighth (1/8) of all oil produced and saved from premises, and to pay for each gas well while the gas is sold therefrom the sum of ..... Dollars ($ .....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damage to growing crops on said land.

Lessor shall be entitled to gas free of cost for heat and light in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same, and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatsoever. Lessee is to have free of charge the waste and casing head gas from oil wells, and water from the premises to use on or off the said premises for its oil and gas operations, and the right to operate and maintain pipe lines and surface rods to and from adjoining lands, and Lessee shall have the right at any time to remove all machinery, material and fixtures which it may place on said premises.

This lease is not to go into effect or merge or replace a prior lease dated ....., now held on said land by said Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Lessee agrees to drill a well on said premises by ..... or pay to Lessor ..... Dollars ($ .....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the nd of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any gas well rental. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the Bank herein below named the sum of ..... Dollar ..., and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the County Clerk's Office of ..... County, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check, to .....; or by deposit to ..... credit in The ..... Bank of ..... or by check made payable to ..... order and mailed to ..... at ..... P. O., ... County, State of ....., who is hereby appointed Agent of the parties of the first part for such purpose .....

This grant and demise, with all of its terms and conditions shall extend to and bind the respective heirs, executors, administrators, successors and assigns of the parties hereto.

In Witness Whereof, We, the parties hereto, have hereunto set our hands and seals the day and year first above written.

Witness:

.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)

STATE OF WEST VIRGINIA,
COUNTY OF ..... } to-wit:

I, ... a .....
of said County of ..... do certify that .....
and ..... his wife, whose names are signed to the within writing, bearing date the .....day of .....A. D. 19...., ha.... this day acknowledged the same before me in my said County.

Given under my hand and notarial seal this .....day of .....A. D. 19....

.....

.....

My Commission expires the .....day of .....A. D. 19....

STATE OF WEST VIRGINIA,
COUNTY OF ..... } to-wit:

I, ... a .....
of said County of .....do certify that .....
and ..... his wife, whose names are signed to the within writing, bearing date the ..... day of .....A. D. 19...., ha....this day acknowledged the same before me in my said County.

Given under my hand and notarial seal this.....day of .....A. D. 19....

.....

.....

My Commission expires the.....day of .....A. D. 19....

Lease No. .....

Oil and Gas Lease

From

.....

.....

To

.....

.....

.....

.....

.....

.....

hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a West Virginia Corporation, hereinafter called the Lessee;

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, on the part of the said party of the second part to be paid, kept and performed, ha...., granted, demised, leased and let, and by these presents do.... grant, demise, lease and let unto the said party of the second part, its successors and assigns, for the sole and only purpose and with the exclusive right of mining and operating for oil and gas, and of using free of charge from any well thereon sufficient gas for drilling and operating upon the same, and of laying pipe lines, and of building tanks, stations and structures thereon, to take care of the said products, all that certain tract of land situate in ..... District .....County, and State of West Virginia, on the waters of..... ....., bounded substantially as follows:

On the North by lands of .....

On the East by lands of.....

On the South by lands of .....

On the West by lands of.....

containing .....acres, more or less,

including lands conveyed to Lessor by.....

by deed dated....., and recorded in said County records in Deed Book..... page.....

TO HAVE AND TO HOLD said premises for the said purpose for and during the term of twenty (20) years from and after the date hereof, and as long thereafer as oil or gas is produced from said land.

No well to be drilled within.....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of one-eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of..... .....Dollars ($.....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damage to growing crops on said

.....Dollars ($.....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damages to growing crops on said land.

Lessor shall be entitled to gas free of cost for heat and light in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same, and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatsoever. Lessee is to have free of charge the waste and casing head gas from oil wells, and water from the premises to use on or off the said premises for its oil and gas operations, and the right to operate and maintain pipe lines and surface rods to and from adjoining lands, and Lessee shall have the right at any time to remove all machinery, material and fixtures which it may place on said premises.

Lessee agrees to drill a well on said premises within.....from this date or pay to Lessor .....Dollars ($.....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any gas well rental. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the Bank herein below named the sum of ..... Dollar...., and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the County Clerk's Office of.....County, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to..... .....or by deposit to.....credit in the .....Bank of ....., or by check made payable to.....order and mailed to ..... at .....P. O., ... County, State of ..... who is hereby appointed Agent of the parties of the first part for such purpose.

.....

.....

This grant and demise, with all of its terms and conditions shall extend to and bind the respective heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, We, the parties hereto, have hereunto set our hands and seals the day and year first above written.

Witness:

.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)

Attest:

.....
Secretary.

UNITED FUEL GAS COMPANY,
(Incorporated)

By.....
President.

STATE OF WEST VIRGINIA,
COUNTY OF..... } to wit:

I, ... a .....
of said County of..... do certify that .....
and ..... his wife, whose names are signed to the within writing
bearing date the ..... day of..... A. D. 19...., ha.... this day acknowledged the
same before me in my said County.

Given under my hand and notarial seal this ..... day of ..... A. D. 19....

.....

.....

My commission expires the..... day of..... A. D. 19 ....

STATE OF WEST VIRGINIA,
COUNTY OF..... } to wit:

I, ... a .....
of said County of..... do certify that .....
and ..... his wife, whose names are signed to the withing writing
bearing date the ..... day of ..... A. D. 19.., ha.... this day acknowledged the
same before me in my said County.

Given under my hand and notarial seal this..... day of ..... A. D. 19 ....

.....

.....

My commission expires the ..... day of ..... A. D. 19....

Lease No.....

OIL and GAS LEASE

From

.....

.....

To

UNITED FUEL GAS CO.
(Incorporated)

Date ..... 19....

Term of Years.....

No. Acres .....

On the Waters of.....

District .....

County .....

State of .....

Received .....

at ..... o'clock..... M.

Recorded ..... 19....

in..... County, ...

Record of Leases, Vol.....Page.....

.....

Recorder

County Clerk

Clerk's Fee. $.....

Recorder's Fee. $.....

0287

THIS AGREEMENT, Made and entered into this .....day of .....
A. D. 191....., between .....
.....
.....
.....

hereinafter called the Lessor, and .....hereinafter called the Lessee;

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, does hereby grant unto the Lessee for the term of twenty years and so long thereafter as oil or gas is produced from the land leased, and royalty and rentals paid by Lessee therefor, all the oil and gas in and under the lands hereinafter described, together with the exclusive right to drill for, produce and market said oil and gas, and to possess so much of said lands as may be necessary or convenient to such operations, the right to use oil, gas and water from said lands in operations thereon and the right to remove, at any time, any and all property placed by Lessee in or upon said premises, and Lessor waives the right to claim or hold during or after the term hereof any of said property as fixtures or as a part of the realty. Said land bounded and described as follows:

On the North by lands of .....
On the East by lands of .....
On the South by lands of .....
On the West by lands of .....
and situate in .....District .....County, State of West Virginia,
and containing .....(.....) Acres,
more or less, including lands conveyed to Lessor by .....
by deed dated ..... and recorded in said County Records in Deed Book.....,
Page.....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within .....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....
.....Dollars ($.....) each three months. Said payments to begin within.....
days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or con-

Page .....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within ..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of ..... Dollars ($.....) each three months. Said payments to begin within ..... days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said Lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee agrees to bury, when requested so to do by Lessor, all pipe lines used to conduct gas off the premises, and to pay all damages to growing crops caused by operations under this lease.

Lessor shall be entitled to gas free of cost for domestic use in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatever, and in consideration therefor, Lessee is to have free of charge the waste and casing head gas from oil wells, and water from any power plant on these premises to use off the said premises for such use as Lessee may desire, and to operate and maintain pipe lines and surface rods to and from adjoining lands.

Lessee agrees to drill a well on said premises within ..... from this date or pay to Lessor ..... Dollars ($.....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any royalty or gas well. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the bank herein below named of ..... Dollar.. and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the ..... County Court Clerk's Office, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to ..... by deposit to ..... credit in The ..... Bank of ....., or by check made payable to ..... order and mailed to..... ....., at ..... P. O. ..... County, State of ....., who is hereby appointed Agent for such purpose.

.....

.....

.....

All grants, conditions, terms and limitations between the parties hereto shall extend to their heirs, executors, administrators, successors or assigns.

IN WITNESS WHEREOF, We, the parties hereto have hereunto set our hands and seals the day and year first above written.

Witness:

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

STATE OF WEST VIRGINIA,
County of ..... } TO-WIT:

I, ...

a ..... of said County of ....., do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the ..... day

of ..... A. D. 191 .., ha .. this day acknowledged the same before me in my said County.

Given under my hand this ..... day of ....., A. D. 191 ..

.....

.....

My commission expires the ..... day of ....., A. D. 191 ..

STATE OF WEST VIRGINIA,
County of ..... } TO-WIT:

I, ...

a ..... of said County of ....., do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the .....day

of ..... A. D. 191 .., ha .. this day acknowledged the same before me in my said County.

Given under my hand this ..... day of ..... 191 ..

My commission as Notary Public .....

expires ..... Notary Public.

Lease No.

OIL and G

.....

.....

Date .....

Term of Years .....

No. Acres .....

On the Waters of .....

District .....

County .....

State of .....

Received .....

at .....

Recorded .....

in .....

Record of Leases, ...

.....

Clerk's Fee, $ .....

Recorder's Fee, $ .....

1852

Lease No.....

OIL and GAS LEASE

From

.....

.....

To

.....

Date ..... 191....

Term of Years.....

No. Acres .....

On the Waters of.....

District .....

County .....

State of .....

Received .....

at ..... o'clock, ... M.

Recorded ..... 191....

in ..... County, ...

Record of Leases, Vol. ..... Page.....

.....

Recorder.

County Clerk.

Clerk's Fee, $.....

Recorder's Fee, $.....

U. L. D. No. 63-5M-1-12

THIS AGREEMENT, Made and entered into this.....day of .....
A. D. 191...., between .....
.....
.....
.....
hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a corporation, hereinafter called the Lessee;
(Incorporated)

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, does hereby grant unto the Lessee for the term of twenty years and so long thereafter as oil or gas is produced from the land leased, and royalty and rentals paid by Lessee therefor, all the oil and gas in and under the lands hereinafter described, together with the exclusive right to drill for, produce and market said oil and gas, and to possess so much of said lands as may be necessary or convenient to such operations, the right to use oil, gas and water from said lands in operations thereon and the right to remove, at any time, any and all property placed by Lessee in or upon said premises, and Lessor waives the right to claim or hold during or after the term hereof any of said property as fixtures or as a part of the realty. Said land bounded and described as follows:

On the North by lands of .....
On the East by lands of .....
On the South by lands of .....
On the West by lands of .....
and situate in ..... Precinct, District ..... County, State of.....,
and containing .....(.....) Acres,
more or less, including lands conveyed to Lessor by.....
by deed dated ....., and recorded in said County Records in Deed Book.....,
Page.....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within.....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....
.....Dollars ($.....) each three months. Said payments to begin within.....

Page.....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within.....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....Dollars ($.....) each three months. Said payments to begin within..... days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said Lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee agrees to bury, when requested so to do by Lessor, all pipe lines used to conduct gas off the premises, and to pay all damages to growing crops caused by operations under this lease.

Lessor shall be entitled to gas free of cost for domestic use in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatever, and in consideration therefor, Lessee is to have free of charge the waste and casing head gas from oil wells, and water from any power plant on these premises to use off the said premises for such use as Lessee may desire, and to operate and maintain pipe lines and surface rods to and from adjoining lands.

Lessee agrees to drill a well on said premises within.....from this date or pay to Lessor.....Dollars ($.....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any royalty or gas well. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the bank herein below named of ..... Dollar.. and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the..... County Court Clerk's Office, ..., either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to .... by deposit to ..... credit in The ..... Bank of ....., or by check made payable to ..... order and mailed to..... ....., at .....P. O., ... County, State of ....., who is hereby appointed Agent for such purpose.

.....

.....

All grants, conditions, terms and limitations between the parties hereto shall extend to their heirs, executors, administrators, successors or assigns.

IN WITNESS WHEREOF, We, the parties hereto have hereunto set our hands and seals the day and year first above written.

Witness:

.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)

Attest:

.....
Sec'y.

UNITED FUEL GAS COMPANY,
(Incorporated)

By.....
President.

STATE OF WEST VIRGINIA,
County of ..... } TO-WIT:

I, ...

a ..... of said County of ....., do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the ..... day

of .....A. D. 191.... ha.... this day acknowledged the same before me in my said County.

Given under my hand this .....day of ....., A. D. 191....

.....

.....

My commission expires the .....day of ....., A. D. 191....

STATE OF KENTUCKY,
County of ..... } SS.

I, ..., a Notary Public in and for the County and State aforesaid, certify that the foregoing instrument of writing, and bearing date the .....day of ....., 191...., was this day produced before me by..... and ....., his wife, known to me to be the parties therein named, and signing same, and by..... acknowledged before me in my said county to be their act and deed.

Given under my hand and seal of office this.....day of .....191....

My commission as Notary Public .....

expires ..... Notary Public.

Lease No. ....

OIL and G

.....

.....

UNITED F

(Inc

Date .....

Term of Years.....

No. Acres .....

On the Waters of.....

Precinct .....

District .....

County .....

State of .....

Received .....

at .....

Recorded .....

in .....

Record of Leases,

.....

Clerk's Fee,

Recorder's Fee,

1074

Lease No.....

OIL and GAS LEASE

From

.....

.....

To

UNITED FUEL GAS Co.

(Incorporated)

Date ..... 191....

Term of Years.....

No. Acres .....

On the Waters of.....

Precinct .....

District .....

County .....

State of .....

Received .....

at .....o'clock, ...M.

Recorded ..... 191....

in ..... County, ...

Record of Leases, Vol..... Page.....

.....

Recorder.

County Clerk

Clerk's Fee, $.....

Recorder's Fee, $.....

RELEASE.

UNITED FUEL GAS COMPANY, Lessee, having paid to the lessor one dollar and all amounts for delay due hereunder, and having elected to surrender the within lease and all rights thereunder, does hereby surrender and cancel the same, and hereby endorses the surrender hereon.

(Incorporated)

IN WITNESS WHEREOF, Lessee has hereunto set Lessee's hand this ..... day of .....A. D. 191....

.....

.....

.....

THIS AGREEMENT, Made and entered into this .....day of .....,

A. D. 191..... between.....

.....

.....

.....

hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a corporation, hereinafter called the Lessee;
(Incorporated)

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, does hereby grant unto the Lessee for the term of twenty years and so long thereafter as oil or gas is produced from the land leased, and royalty and rentals paid by Lessee therefor, all the oil and gas in and under the lands hereinafter described, together with the exclusive right to drill for, produce and market said oil and gas, and to possess so much of said lands as may be necessary or convenient to such operations, the right to use oil, gas and water from said lands in operations thereon and the right to remove, at any time, any and all property placed by Lessee in or upon said premises, and Lessor waives the right to claim or hold during or after the term hereof any of said property as fixtures or as a part of the realty. Said land bounded and described as follows:

On the North by lands of.....

On the East by lands of.....

On the South by lands of.....

On the West by lands of.....

and situate in .....District, ...County, State of West Virginia,

and containing ..... (.....) Acres,

more or less, including lands conveyed to Lessor by .....

by deed dated ....., and recorded in said County Records in Deed Book .....,

Page .....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within ..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....

.....Dollars ($.....) each three months. Said payments to begin within.....

days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by

also license to operate on same of pipe line a royalty of One Eighth (1/8) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....

.....Dollars ($.....) each three months. Said payments to begin within..... days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said Lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee agrees to bury, when requested so to do by Lessor, all pipe lines used to conduct gas off the premises, and to pay all damages to growing crops caused by operations under this lease.

Lessor shall be entitled to gas free of cost for domestic use in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatever, and in consideration therefor, Lessee is to have free of charge the waste and casing head gas from oil wells, and water from any power plant on these premises to use off the said premises for such use as Lessee may desire and to operate and maintain pipe lines and surface rods to and from adjoining lands.

This lease is not to go into effect or merge or replace a prior lease dated ..... now held on said land by said Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Lessee agrees to drill a well on said premises by .....or pay to Lessor ..... Dollars ($.....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any royalty or gas well. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the bank herein below named of .....Dollar.. and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the.....County Court Clerk's Office, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to..... ..... by deposit to ..... credit in The ..... Bank of ....., or by check made payable to..... order and mailed to....., at ..... P. O., ... County, State of ..... ,who is hereby appointed Agent for such purpose.

.....

All grants, conditions, terms and limitations between the parties hereto shall extend to their heirs, executors, administrators, successors or assigns.

IN WITNESS WHEREOF, We, the parties hereto have hereunto set our hands and seals the day and year first above written.

WITNESS:

.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)

ATTEST:

.....
Sec'y.

UNITED FUEL GAS COMPANY,
(Incorporated)

By .....
President.

STATE OF WEST VIRGINIA,
County of ..... } TO WIT:

I, ...

a ..... of said County of ..... do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the ..... day

of .....A. D. 191..... ha.... this day acknowledged the same before me in my said County.

Given under my hand this ..... day of ..... A. D. 191....

.....

.....

My commission expires the ..... day of ..... A. D. 19.....

STATE OF WEST VIRGINIA,
County of ..... } TO WIT:

I, ...

a .....of said County of ..... do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the ..... day

of .....A. D. 191..... ha.... this day acknowledged the same before me in my said County.

Given under my hand this ..... day of ..... A. D. 191....

.....

.....

My commission expires the ..... day of..... A. D. 19.....

LEASE No.

OIL AND

.....

.....

UNITED F

(I

Date .....

Term of Years .....

No. Acres .....

On the Waters of .....

District .....

County .....

State of .....

Received .....

at .....

Recorded .....

in .....

Record of Leases, V. ..

.....

Clerk's Fee, $.....

Recorder's Fee, $.....

LEASE NO. .....

OIL AND GAS LEASE

FROM

.....

.....

TO

UNITED FUEL GAS CO.
(Incorporated)

Date ..... 191....

Term of Years .....

No. Acres .....

On the Waters of .....

District .....

County .....

State of .....

Received .....

at .....o'clock.....M.

Recorded ..... 191....

In ..... County.

Record of Leases, Vol. ..... Page .....

.....

Recorder.

County Clerk.

Clerk's Fee, $.....

Recorder's Fee, $.....

RELEASE.

UNITED FUEL GAS COMPANY, (Incorporated) Lessee, having paid to the lessor one dollar and all amounts for delay due hereunder, and having elected to surrender the within lease and all rights thereunder does hereby surrender and cancel the same, and hereby releases the surrender hereof.

IN WITNESS WHEREOF, Lessee has hereunto set Lessee's hand this ..... day of

A. D. 191....

.....

.....

THIS AGREEMENT, Made and entered into this ..... day of .....,

A. D. 191..., between .....

.....

.....

.....

hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a corporation, hereinafter called the Lessee;

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, does hereby grant unto the Lessee for the term of twenty years and so long thereafter as oil or gas is produced from the land leased, and royalty and rentals paid by Lessee therefor, all the oil and gas in and under the lands hereinafter described, together with the exclusive right to drill, for, produce and market said oil and gas, and to possess so much of said lands as may be necessary or convenient to such operations, the right to use oil, gas and water from said lands in operations thereon and the right to remove, at any time, any and all property placed by Lessee in or upon said premises, and Lessor waives the right to claim or hold during or after the term hereof any of said property as fixtures or as a part of the realty. Said land bounded and described as follows:

On the North by lands of .....

On the East by lands of .....

On the South by lands of .....

On the West by lands of .....

and situate in ..... Precinct ..... County, State of Kentucky,

and containing ..... (.....) Acres,

more or less, including lands conveyed to Lessor by .....

by deed dated ....., and recorded in said County records in Deed Book .....,

Page .....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of .....

..... Dollars ($ .....) each three months. Said payments to begin within .....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within ..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of .....

..... Dollars ($ .....) each three months. Said payments to begin within .....

days after the completion of said well.

Said Lessor shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said Lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee agrees to bury, when requested so to do by Lessor, all pipe lines used to conduct gas off the premises, and to pay all damages to growing crops caused by operations under this lease.

Lessor shall be entitled to gas free of cost for domestic use in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatever, and in consideration therefor, Lessee is to have free of charge the waste and casing head gas from oil wells, and water from any power plant on these premises to use off the said premises for such use as Lessee may desire, and to operate and maintain pipe lines and surface rods to and from adjoining lands.

This lease is not to go into effect or merge or replace a prior lease dated ....., now held on said land by said Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Lessee agrees to drill a well on said premises by ..... or pay to Lessor ..... Dollars ($ .....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any royalty or gas well. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the bank herein below named of ..... Dollar.. and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the ..... County Court Clerk's Office, Kentucky, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to ..... , by deposit to ..... credit in The ..... Bank of ....., or by check made payable to ..... order and mailed to....., at ..... P. O., ... County, State of ....., who is hereby appointed Agent for such purpose.

.....

All grants, conditions, terms and limitations between the parties hereto shall extend to their heirs, executors, administrators, successors or assigns.

IN WITNESS WHEREOF, We, the parties hereto have hereunto set our hands and seals the day and year first above written.

WITNESS:

.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)

STATE OF KENTUCKY, } TO WIT:

COUNTY OF .....

I, ...

I, ..., a Notary Public, in and for the County and State aforesaid, certify that the foregoing instrument of writing from .....

to UNITED FUEL GAS COMPANY, a corporation, and bearing date the ..... day of ....., 19....., was this day produced before me in said County and State, by said Grantor... and acknowledged before me by said ..... to be ..... act and deed.

My Commission of Notary Public will expire on the ..... day of ....., 19.....

Given under my hand and seal this ..... day of ....., 19.....

.....

Notary Public in and for the County and State aforesaid.

STATE OF KENTUCKY, } TO WIT:

COUNTY OF .....

I, ..., a Notary Public, in and for the County and State aforesaid, certify that the foregoing instrument of writing from .....

to UNITED FUEL GAS COMPANY, a corporation, and bearing date the ..... day of ....., 19....., was this day produced before me in said County and State, by said Grantor... and acknowledged before me by said ..... to be ..... act and deed.

My Commission of Notary Public will expire on the ..... day of ....., 19.....

Given under my hand and seal this ..... day of ....., 19.....

.....

Notary Public in and for the County and State aforesaid.

LEASE NO.

OIL AND

.....

.....

UNITED

Date .....

Term of Years .....

No. Acres .....

On the Waters of .....

Precinct .....

County .....

State of .....

Received .....

at .....

Recorded .....

in .....

Record of Leases, ...

.....

Clerk's Fee, $...

Recorder's Fee, $...

LOVETT PRINTING

1058

Lease No. .....

OIL AND GAS LEASE

FROM

.....

.....

TO

UNITED FUEL GAS CO.

Date ..... 191....

Term of Years .....

No. Acres .....

On the Waters of .....

Precinct .....

County .....

State of .....

Received .....

at ..... o'clock, ... M.

Recorded ..... 191....

in ..... County, ...

Record of Leases, Vol....., Page.....

.....

Recorder.

County Clerk.

Clerk's Fee, $.....

Recorder's Fee, $.....

LOVETT PRINTING CO., CHARLESTON, W. VA.

RELEASE

UNITED FUEL GAS COMPANY. Having paid to the Lessor ..... dollar.. and all amounts for delay hereunder, and having elected to surrender the within lease and all rights thereunder, does hereby surrender and cancel the same, and hereby endorses the surrender hereon.

IN WITNESS WHEREOF, Lessee has hereunto set Lessee's hand this ..... day of

.....

....., A. D., 191....

.....

.....

.....

.....

[fol. 1776] JUDGE EXHIBIT No. 1

United Fuel Gas Company, Inc., and Subsidiaries and Virginian Gasoline and Oil Company

Report on Natural Gas Investment as of December 31, 1923, and Results from Operations for Year Ended that Date

[fol. 1777] Telephone Randolph 5386

Arthur Anderson & Co., Certified Public Accountants, Harris Trust Building, Chicago

Chicago, New York, Milwaukee Washington, Kansas City

December 27, 1924.

Mr. H. D. Rummel, Attorney-at-law, Charleston, West Virginia.

DEAR SIR: In accordance with instructions received from you acting pursuant to resolutions passed by the cities of Charleston and Huntington under dates of June 2, 1924 and July 8, 1924 respectively, we have made an investigation of the books and records of the United Fuel Gas Company and its subsidiaries, the Cabin Creek Gas Company and Warfield Natural Gas Company, and also those of the Virginian Gasoline and Oil Company, an affiliated company. This investigation was made for the purpose of ascertaining the original cost of the natural gas property owned by the United Fuel Gas Company and its subsidiaries as of December 31, 1923, and also for the purpose of determining the results from natural gas operations in the case of the combined companies for the year ended that date.

Original Cost of Property Devoted to Natural Gas Service

According to the records of the companies involved in this investigation, the book value of all properties owned at December 31, 1923 was $74,069,215.83. This amount is divided between the different [fol. 1778] classes of investment as follows:

Natural Gas	$59,636,100.24
Gasoline (Including Tank Cars)	1,750,302.81
Oil	12,449,910.18
Carbon Black	113,868.44
Incomplete Construction	119,034.16
Total	$74,069,215.83

The book value of the natural gas property is made up as follows:

Original Properties acquired plus Additions and Extensions stated at Cost reflected by Books	$27,511,797.04
Value Added through Appraisal of Acreage	32,124,303.20
Total Book Value Natural Gas Property	$59,636,100.24

As indicated above there was added (in 1918) to the cost of the property the sum of $32,124,303.20 for the purpose of bringing the value of the acreage or leasehold rights owned by the company to the amount found by an engineering appraisal made about that time. Since this amount clearly represents appreciation over and above the cost of such acreage or leasehold rights to the company, it must be excluded in any determination of the original cost of the physical property at present in service.

For the purposes of this report certain adjustments have been made to the original cost of the property as reflected by the books which adjustments result in a reduction of the same to the extent of $1,222,885.21 as shown below:

Original Cost per Books, as above		$27,511,797.04
Deduct:		
Unoperated Acreage Assignable to Oil Investment	$389,590.61	
Financing Improvement and Betterment	195,727.58	
Depreciation and Adjustment	756,601.18	
	$1,341,919.37	
Less Incomplete Construction	119,034.16	
		1,222,885.21
Original Cost after above Adjustments		$26,288,911.83

[fol. 1779] The cost of practically all unoperated acreage whether oil or gas, or both, is carried on the books of the United Fuel Gas Company, Inc., and its subsidiaries and is shown as natural gas investment. A considerable amount of this acreage is probable oil territory and the rights to extract such oil when found have already been assigned in a number of cases to the Virginian Gasoline and Oil Company. When the assignment of these rights was made in 1922 no part of the book cost of the acreage was transferred to the books of the Virginian Company. The result is that the natural gas investment includes the cost of whatever acreage will prove to be oil bearing in the future. Not all of the acreage owned or controlled by the company carries oil rights. On a large proportion of the total acreage the oil rights are owned by other parties such as the South Penn Oil Company, the Ohio Fuel Oil Company and others.

On December 31, 1923, the company had on its books 504,387.28 acres for which it held either directly or indirectly both the gas and oil rights. That oil rights which it did not hold directly were held by the Virginian Gasoline and Oil Company. The book cost of the acreage for which joint oil and gas rights were held was $2,597,270.75. No entirely satisfactory basis can be found for allocating this joint investment between oil and gas. In order to arrive at some reasonable basis of allocation, we studied such factors as the ratio of operated oil acreage and investment to operated gas acreage and investment; the ratio of the appraisal values of the gas and oil acreage, both operated and unoperated; and the total acreage of the company known or reasonably certain to be oil or gas territory, etc. These bases indicated that 13 to 25 per cent of acreage in which joint rights were involved should be charged to the oil department. In reports on the same property made by this firm prior to the one dated April 23, 1923, $350,000 was deducted as representing oil investment. In our report dated 23, 1923, 20 per cent or $496,094.95 was eliminated from the natural gas investment and assigned to the oil department. Our investigations indicated that 15 per cent is about the minimum amount of the joint acreage cost which can be considered as assignable to oil investment. The adjustment on this basis as already shown in the statement above is $389,590.61.

[fol. 1780] The adjustment under the caption of Financing Improvements and Betterments is for the purpose of eliminating from the property accounts the element of bond discount and expense. This discount and expense was incurred for the most part in connection with the marketing of the company's first mortgage bonds in 1916 and 1917. Items of this character are properly classified as a deferred charge. They are, in effect, interest paid in advance and as such should be amortized over the life of the securities to which they relate. Public Service Commissions generally have held that this is the proper treatment for security discount and expense items.

Prior to 1916 in cases where the company retired property or abandoned acreage it charged the book cost thereof either to operating expenses or to profit and loss. In the years 1916 and 1917 and to a minor extent in 1918 it transferred such book cost from the physical property accounts to an account called Depreciation and Adjustment. The amounts in the latter account were still retained as part of the natural gas property cost. Since this property is no longer in service its cost cannot be included in the original cost of the existing property. If a depreciation reserve had been provided in the earlier years the amounts in the Depreciation and Adjustment account would have been chargeable thereagainst. In the absence of a depreciation provision the book cost of the retired or abandoned property should have been charged to profit and loss. In any event this item is not properly included in the cost of the physical property.

In reports heretofore made we have always included Incomplete Construction as a part of the property cost. Such incomplete con-

struction is often incomplete from an accounting standpoint only. The property is sometimes actually in use and where this is not the case the investment has at any rate already been made. In the present case no interest is charged to construction so that no carrying charge is added to the direct cost.

The cost of the gas property after adjustment ($26,288,911.83) as shown above does not represent the actual cash cost of the property either to the present owners or to the present owners and their prede- [fol. 1781] cessors in interest. At the time the present company (United Fuel Gas Company, Inc., and Subsidiaries) was organized in 1909 it acquired property, represented principally by acreage, from the United Fuel Gas Company (old Company), the United States Natural Gas Company and the Hope Natural Gas Company. On the books of the United Fuel Gas Company, Inc. (the new Company) the property acquired was taken up partly on an appraisal basis and partly on the basis of the book values of one of the predecessor companies. The consideration as far as reflected by the books of the United Fuel Gas Company, Inc., is concerned, was the issuance to third parties of certain stock and debenture bonds such third parties in turn making the actual settlement in the case of the Hope Natural Gas Company and the United States Natural Gas Company acquisitions. The actual cash cost of the properties to the present owners cannot be accurately ascertained unless access can be had to the books of the companies from whom the properties were acquired. The method used by the company in finally recording such acquisitions on its books had the effect of clearing all of the unaccounted for physical property through the acreage account so that subject to the correctness of the book cost of the acreage the other physical items are recorded on the books as nearly as may be at the original cost thereof. A separate report showing the makeup of the acreage accounts is being submitted as of even date and explains in greater detail the financial transactions at the time of the organization of the present company.

Operating Results for Year 1923

The following statement shows the operating results of the gas department, per books and as adjusted by us:

Particulars	Per books	Adjustments	As adjusted
[fol. 1782] Gross Earnings	$7,730,176.40	$1,495,496.69	$9,225,673.09
Operating Expenses and Ordinary Taxes	3,422,456.68	79,006.06*	3,343,450.62
Net Earnings	$4,307,719.72	$1,574,502.75	$5,882,222.47
Add—50% of Gasoline Net Earnings		934,393.91	934,393.91
Net Earnings after Deducting for Proportion of Gasoline Net Earnings	$4,307,719.72	$2,508,896.66	$6,816,616.38
Income Tax Estimated		312,346.14	312,346.14
Net Earnings Available for Depletion, Depreciation and Return on Investment	$4,307,719.72	$2,196,550.52	$6,504,270.24

The details of the adjustments shown above are set forth in the statement which follows:

Adjustment of Gross Earnings—Increased Revenue which would accrue to company if affiliated companies paid rates comparable with those paid by West Virginia Consumers	$1,495,496.69	$1,495,496.69
Adjustment of Operating Expenses:		
Unoperated acreage rentals and expense properly chargeable to oil department	88,039.31	
Proportion of Taxes assignable to oil department	7,207.43	
	$95,246.74	

Operating Results for Year 1923—Continued

Particulars	Per books	Adjustments	As adjusted
Less Profit and Loss Items chargeable to Operations		16,240 68	
			79,006 03
Total above Adjustments			$1,574,502 75
Add 50% of Gasoline Net Earnings			934,393 91
			$2,508,896 66
Deduct Estimated Federal Income Tax Assignable to Gas Department			312,346 14
Net Adjustments, as above			$2,196,550 52

(*Red in copy.)

[fol. 1783] The contracts covering the sale of gas to the Columbia Gas and Electric Company and the Ohio Fuel Supply Company provide for an average rate per M Cubic Feet which is considerably less than that paid by the other wholesale consumers. The Columbia and Ohio Fuel Companies jointly own all of the common stock of the United Fuel Gas Company, Inc. and it is understood that the price at which gas is sold to them has been determined by considerations other than the cost or value of the gas from the standpoint of the selling company. In order that the rate in the case of these companies might be placed on the same basis as those prevailing in West Virginia cities, we determined the average revenues for such cities and deducted therefrom an allowance per M Cubic Feet to cover distribution costs. Based on the actual cost of the distribution system plus expense of operation and overhead items, the average cost per M Cubic Feet during 1923 was 3.71 cents. The Public Service Commission of West Virginia has adjusted the company's rates on a valuation base which is in excess of the cost of the property and some consideration must, therefore, be given to this fact. We have also considered the cost of reproduction less depreciation of the distribution system in this connection and it appears that a deduction of 4.5 cents from the average rate of 20.27 for West Virginia cities would represent a fair allowance for the distribution factor. This would result in the Columbia and Ohio Fuel Companies paying an average rate of 15.77 cents per M Cubic Feet instead of 7.25 cents under the existing contracts. The adjustment on this basis is set forth in the following statement:

Revenue which would have been derived in 1923 from 17,613,173 M Cubic Feet of gas sold to parent companies if rate of 15.77 cents per M Cubic Feet had applied	$2,777,597.38
Amount actually billed parent companies at average rate of 7.25 cents per M Cubic Feet	1,282,100.69
Adjustment on above basis	$1,495,496.69

As already indicated, the investment of the company in practically all joint gas and oil unoperated acreage is charged entirely to the gas department. The same principle is followed out in connection with the rentals or carrying charges on such acreage. For the pur-

[fol. 1784] poses of this report, we determined the rentals paid in 1923 on joint gas and oil acreage and assigned 15% thereof to the oil department. This is the same percentage as was used in connection with the apportionment of the book investment in the joint acreage.

The taxes on the joint acreage are also assigned to the gas department by the company. In order to adjust for this item, we apportioned to the oil department on a cost-of-property basis its proportion of the total taxes paid by the United Fuel Gas Company.

Certain profit and loss adjustments have been included by us as operating expenses because they represent delayed items which would normally flow through the operating accounts.

A deduction from operating expenses of 50% of the net earnings of the gasoline department has been made for the purposes of this report. This is in accordance with the decisions of the Public Service Commission of West Virginia and the Supreme Court of Appeals of West Virginia. The amount of the deduction has been determined as follows:

Gross Earnings—Gasoline Department		$3,013,860.53
Deduct		
Manufacturing Costs	$320,627.04	
Other Direct Expenses	415,221.87	
General Expenses	70,637.42	
Ordinary Taxes	40,537.29	
		847,023.62
Net Revenue		$2,166,836.91
Less		
Depreciation on Company Basis 10%	$116,739.73	
Federal Income Taxes Estimated	181,310.36	
		298,050.09
Net Earnings		$1,868,786.82
50% of above Net Earnings		$934,393.41

The company in 1923 made a provision of $113,508.08 for that part of the income taxes which were assignable to the gas department. We have increased this provision to $312,346.14 in order to take care of the tax which would have accrued were the company to record on its books the adjustments which we have made in this report.

[fol. 1785] Distribution of Investment and Net Earnings to Various Divisions

In a statement appended hereto, there is shown the distribution of the investment, gross earnings, operating expenses and net earnings to the various divisions of the company's business. For the purposes of this statement there is included in addition to the cost of the physical property of $26,288,911.83 as already arrived at, an allowance of $890,000 for Working Capital, and $3,000,000 for Going Concern Value. The provisions for Working Capital and Going Concern Value are the estimates for these items made by Mr. Wm. J. Hagenah of Hagenah & Erickson, Chicago, Illinois. The principal conclusions to be reached from the statement referred to are set forth in summary form below:

UNITED FUEL GA

STATEMENT SHOWING THE DISTRIBUTION OF THE

AND THE RATIO OF THE SAME TO THE INV

AND EXPENSES D

Particulars	Basis of Apportionment	C
INVESTMENT:		
Production Property Cost	Sales	
Transmission Property Cost	System Demand Mileage	
Distribution Property Cost	Direct	
General Property Cost	Overhead on Property	
Total Cost of Physical Property		
Working Capital	Overhead on Expenses	
Going Concern Value	Overhead on Property	
Total Investment in Natural Gas Service		
GROSS EARNINGS:		
Revenue from Sale of Gas	Direct	
Miscellaneous Operating and Non-Operating Revenues	Overhead on Revenues	
Total Gross Earnings		
OPERATING EXPENSES AND ORDINARY TAXES:		
Gas Purchased	Sales	
Production	Sales	
Transmission	System Demand Mileage	
Distribution	Direct	
Commercial	Direct	
General and Inter-departmental	Overhead on Expenses	
Total items above		
Taxes	Property	
Profit and Loss Adjustments	Overhead on Expenses	
Total Operating Expenses and Ordinary Taxes		
80% of Gasoline Net Revenues	Sales	
Net Operating Expenses after deducting for proportion of Gasoline Net Earnings		
Gross Income		
INCOME TAXES ESTIMATED	Taxable Income	
Net Earnings available for Depletion, Depreciation and Return		
PER CENT OF INVESTMENT IN NATURAL GAS SERVICE		

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

THE DISTRIBUTION OF THE NET EARNINGS AVAILABLE FOR DEPLETION, DEPRECIATION AND RETURN

ON OR THE SAME TO THE INVESTMENT IN NATURAL GAS SERVICE, TRANSMISSION INVESTMENT

AND EXPENSES DISTRIBUTED ON DEMAND MILEAGE BASIS

Basis of Apportionment	City of Charleston	City of Huntington	City of Williamson	Other West Virginia Districts	Total West Virginia	Kentucky and Ohio Districts	Wholesale Service	Total for Natural Gas Service
Sales	$1,834,310	$ 829,440	$109,215	$ 932,751	$3,705,916	$1,508,341	$ 9,544,467	$14,758,724
System Demand Mileage	638,510	741,045	102,534	449,288	1,931,377	1,496,072	5,893,871	9,321,320
Direct	665,523	539,081	58,060	243,602	1,506,236	581,048	-	2,087,284
Overhead on Property	14,590	9,800	1,252	7,550	33,192	46,857	71,735	121,584
	$3,153,133	$2,119,336	$271,061	$1,633,191	$7,176,721	$3,632,318	$15,510,073	$26,288,912
Overhead on Expenses	126,918	73,260	10,098	72,270	282,546	138,699	566,755	990,000
Overhead on Property	360,000	241,800	30,900	186,300	819,000	411,000	1,770,000	3,000,000
	$3,640,051	$2,434,396	$312,059	$1,891,761	$8,278,267	$4,181,817	$17,848,828	$30,278,912
Direct	$1,110,919	$ 548,948	$ 61,078	$ 671,406	$2,310,951	$1,524,867	$ 5,358,500	$ 9,194,318
Overhead on Revenues	3,788	1,866	279	1,947	7,880	5,202	18,273	31,355
	$1,114,707	$ 548,814	$ 61,357	$ 673,353	$2,318,831	$1,530,069	$ 5,376,773	$ 9,225,673
Sales	$ 76,974	$ 34,803	$ 4,583	$ 39,137	$ 155,497	$ 63,289	$ 400,478	$ 619,264
Sales	141,697	64,047	8,433	72,025	286,162	126,471	737,001	1,139,634
System Demand Mileage	81,106	47,707	6,601	28,924	164,338	96,313	379,433	600,084
Direct	48,452	24,201	4,837	25,688	101,228	57,966	-	159,194
Direct	30,606	24,637	4,325	26,947	86,519	35,925	-	122,240
Overhead on Expenses	26,652	15,384	2,121	15,177	59,334	29,126	119,436	207,896
	$ 365,247	$ 210,829	$ 30,900	$ 207,898	$ 813,074	$ 399,090	$ 1,636,348	$ 2,848,312
Property	57,468	38,199	4,932	29,740	130,739	65,609	282,550	478,898
Overhead on Expenses	4,082	1,202	166	1,185	4,635	2,275	9,331	16,241
	$ 424,797	$ 250,230	$ 35,998	$ 238,823	$ 948,248	$ 466,974	$ 1,928,229	$ 3,343,451
Sales	116,145 X	58,813 X	6,914 X	59,054 X	234,646 X	99,495 X	604,473 X	934,394 X
	$ 308,652	$ 191,417	$ 27,084	$ 179,769	$ 713,622	$ 371,479	$ 1,323,956	$ 2,409,057
	$ 806,055	$ 390,697	$ 54,873	$ 393,584	$1,605,309	$1,158,390	$ 4,059,817	$ 6,816,616
Taxable Income	19,000	8,264	1,292	9,280	37,836	27,302	247,208	312,346
	$ 787,055	$ 382,433	$ 53,581	$ 384,304	$1,567,373	$1,131,088	$ 3,812,609	$ 6,504,270
	21.62	14.87	17.17	20.31	18.93	27.15	21.32	21.48

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Divisions	Distribution of investment	Net earnings available for depletion, depreciation, and return on investment	Per cent of net earnings to investment
City of Charleston	$3,640,051	$787,055	21.62
City of Huntington	2,434,396	342,433	14.07
City of Williamson	312,059	53,581	17.17
Other West Virginia Districts	1,891,761	384,304	20.31
Total West Virginia	$8,278,267	$1,567,373	18.93
Ohio and Kentucky Districts	4,151,817	1,131,288	27.25
Wholesale Service	17,848,828	3,805,609	21.32*
Total	$30,278,912	$6,504,270	21.48

The bases of apportionment used in arriving at the results above are approved by the Public Service Commission of West Virginia in its opinions covering the rates of the United Fuel Gas Company with the exception that in the case of transmission investment and expenses, the demand mileage instead of the sales mileage basis is used. [fol. 1786] At the time the Commission originally investigated the matter of apportionments, demand information was not available. In our opinion, the demand mileage is the more accurate basis of distribution.

It will be noted that the percentages shown above are before allowance has been made for depletion and depreciation.

Our investigation showed the books of the company to be complete and well kept, and we wish to express our appreciation of the courtesies extended our representatives by the management.

Very truly yours, Arthur Andersen & Co., Certified Public Accountants

(Here follows side folio page 1787)

*21.93 per cent on basis of price charged by company for gas used by parent companies.

[fol. 1788] United Fuel Gas Company, Inc., and Subsidiaries

Statement of Adjusted Revenues and Expenses, Gas Department, for the Year Ended December 31, 1923

Particulars	Per books	Adjustments	As adjusted
Gross Earnings			
Retail Service			
City of Charleston	$1,110,919.16	$	$1,110,919.16
City of Huntington	546,948.26		546,948.26
City of Williamson	81,677.39		81,677.39
Other West Virginia Districts	571,406.07		571,406.07
Total West Virginia	$2,310,950.88	$	$2,310,950.88
Kentucky and Ohio Districts	1,524,867.13		1,524,867.13
Total Retail Sales	$3,835,818.01	$	$3,835,818.01
Wholesale Service	3,863,003.55	$1,495,496.69	5,358,500.24
Total Gas Sales	$7,698,821.56	$1,495,496.69	$9,194,318.25
Miscellaneous Operating and Non-Operating Revenues	31,354.84		31,354.84
Total Gross Earnings	$7,730,176.40	$1,495,496.69	$9,225,673.09
Operating Expenses and Ordinary Taxes			
Gas Purchased	$619,263.69	$	$619,263.69
Production	1,227,672.67	$88,039.314	1,139,633.36

Transmission	600,084.20		600,084.20
Distribution	159,194.11		159,194.11
Commercial	122,240.19		122,240.19
General and Inter-departmental	207,896.12		207,896.12
Total Items Above	$2,936,350.98	$88,039.31†	$2,848,311.67
Taxes (Other than Federal Income Taxes)	486,105.70	7,207.43†	478,898.27
Profit and Loss Adjustments		16,240.68	16,240.68*
Total Operating Expenses and Ordinary Taxes	$3,422,456.68	$79,006.06†	$3,343,450.62
Deduct 50% of Gasoline Net Earnings		934,393.91	934,393.91
Net Operating Expenses after deducting for proportion of Gasoline Net Earnings	$3,422,456.68	$1,013,399.97†	$2,409,056.71
Gross Income	$4,307,719.72	$2,508,896.66	$6,816,616.38
Income Taxes Estimated		312,346.14	312,346.14
Net Earnings available for Depletion, Depreciation and Return on Investment	$4,307,719.72	$2,196,550.52	$6,504,270.24

*Does not include $108,527.87 revenues applying to prior periods in case of the Ironton, Ohio, rate litigation settlement.
[1Red in copy.]

Adjusted Cost of Property and Plant, Gas Department as of December 31, 1923

Particulars	Cost of property and plant per books	Adjustments	Cost of property and plant as adjusted
Line Pipe	$5,884,992.38	.....	$5,884,992.38
Well Pipe	1,361,921.56	.....	1,361,921.56
Well Equipment	3,788,008.01	.....	3,788,008.01
Operated Acreage	2,009,395.14	.....	2,009,395.14
Unoperated Acreage	4,723,525.14	$389,590.61*	4,333,934.53
Right of Way	119,818.51	.....	119,818.51
Right of Way Expense	121,220.49	.....	121,220.49
Buildings	328,684.22	.....	328,684.22
Fittings	200,004.65	.....	200,004.65
Other Line Equipment	116,638.73	.....	116,638.73
Labor, Teaming and Freight	3,705,451.43	.....	3,705,451.43
Regulators	30,222.51	.....	30,222.51
Telephone and Telegraph Lines	111,924.76	.....	111,924.76
Office Furniture	42,656.92	.....	42,656.92
Tools over $25.00	17,219.37	.....	17,219.37
Meters	499,829.96	.....	499,829.96
Compressor Stations	2,888,441.59	.....	2,888,441.59
Measuring Stations	118,413.38	.....	118,413.38
Service Lines	330,563.74	.....	330,563.74
Autos, Horses and Wagons	38,518.52	.....	38,518.52
Drilling Tools	71,625.45	.....	71,625.45

Cleaning Out Tools	50,391.82		50,391.82
Cost of Financing	195,727.58	195,727.58*	
Depreciation and Adjustment	756,601.18	756,601.18*	
Total Cost of Property and Plant	$27,511,797.04	$1,341,919.37*	26,169,877.67
Incomplete Construction	119,034.16		119,034.16
Total Cost of Property and Plant including Incomplete Construction	$27,630,831.20	$1,341,919.37*	$26,288,911.83
Distribution of Total, as Above			
Production	$15,784,695.17	$1,025,971.53*	$14,758,723.64
Transmission	9,321,120.34	200.03	9,321,320.37
Distribution	2,209,888.15	122,604.04*	2,087,284.11
General	196,093.38	74,509.67*	121,583.71
Total Cost of Property and Plant	$27,511,797.04	$1,222,885.21*	$26,288,911.83
Incomplete Construction	119,034.16	119,034.16*	
Total as above	$27,630,831.20	$1,341,919.37*	$26,288,911.83

[*Red in copy.]

Statement of Provision for Depreciation and Depletion Arrived at by Applying Annual Rate Used by Company to Adjusted Original Cost of Property as of December 31, 1923

Particulars

Gas Department

Depreciation Gas Wells	Original cost of property and plant at Dec. 31, 1923, as adjusted	Annual depreciation rate used by company	Amount
Tubing and Casing	$1,381,443.98	8	$110,515.52
Other Equipment	1,362,997.51	8	109,032.60
Well Connecting Lines	677,767.18	8	54,221.37
Field Gathering Lines	2,109,177.17	5	105,458.86
Transmission Lines	6,167,380.13	5	308,369.01
Street Mains	1,174,279.29	5	58,713.96
Regulators	30,222.51	5	1,511.13
Meters	499,829.96	5	24,991.50
Measuring Stations	118,413.38	5	5,920.67
Service Lines	330,563.74	5	16,528.19
Large Tools	17,219.37	5	860.97
Drilling Tools	71,625.45		
Cleaning Out Tools	50,391.82	5	2,519.59
Telephone and Telegraph Lines	111,924.76	5	5,596.24
Buildings	328,684.22	4	13,147.37
Furniture and Fixtures	42,656.92	6⅔	2,843.79

Horses, Wagons and Automobiles	38,518.52	10	3,851.85
Compressor Stations	2,888,441.59	5	144,422.08
Incomplete Construction	119,034.16	5	5,951.71
	$17,520,481.66	5.5	$974,456.41
Depletion	8,768,430.17	3.16	277,082.39
Total Gas Department	$26,288,911.83	4.8	$1,251,538.80
Gasoline Department	$1,167,387.25	10	$116,738.72
Oil Department			
Depreciation	$1,854,528.82	10.3	$191,327.29
Depletion	1,585,048.70	5.37	85,115.05
Total Oil Department	$3,439,577.52	8	$276,442.34
Carbon Black Department	$113,868.44	10	$11,386.84
Tank Car Department	$582,915.56	5	$29,145.78
Total Depreciation	$21,239,181.73	6.2	$1,323,055.04
Total Depletion	10,353,478.87	3.5	362,197.44
Grand Total	$31,592,660.60	5.3	$1,685,252.48

United Fuel Gas Company, Inc., and Subsidiaries Kentucky and Ohio Districts

Statement Showing the Distribution of the Net Earnings Available for Depreciation, Depletion, and Return and the Ratio of the Same to the Investment in Natural Gas Service, Transmission, Investment, and Expenses Distributed on Demand Mileage Basis

Particulars Investment	Basis of apportionment	Ashland and Catlettsburg, Kentucky district	Ohio districts	Total Kentucky and Ohio districts
Production Property Cost	Sales	$1,029,292	$479,049	$1,508,341
Transmission Property Cost	System Demand Mileage	958,085	537,987	1,496,072
Distribution Property Cost	Direct	307,697	273,441	581,048
General Property Cost	Overhead on Property	10,662	5,995	16,657
Total Cost of Physical Property		$2,305,646	$1,296,472	$3,602,118
Working Capital	Overhead on Expenses	87,367	51,332	138,699
Going Concern Value	Overhead on Property	263,081	147,919	411,000
Total Investment In Natural Gas Service		$2,656,094	$1,495,723	$4,151,817
Gross Earnings				
Revenue from Sale of Gas	Direct	$994,197	$530,670	$1,524,867
Miscellaneous Operating and Non-Operating Revenues	Overhead on Revenues	3,392	1,810	5,202
Total Gross Earnings		$997,589	$532,480	$1,530,069

Operating Expenses and Ordinary Taxes

Gas Purchased	Sales	$43,188	$20,101	$63,289
Production	Sales	79,480	36,991	116,471
Transmission	System Demand Mileage	61,679	34,634	96,313
Distribution	Direct	30,190	27,776	57,966
Commercial	Direct	18,508	17,417	35,925
General and Inter-departmental	Overhead on Expenses	18,346	10,780	29,126
Total items above		$251,391	$147,699	$399,090
Taxes	Property	41,996	23,613	65,609
Profit and Loss Adjustments	Overhead on Expenses	1,433	842	2,275
Total Operating Expenses and Ordinary Taxes	Sales	$294,820	$172,154	$466,974
50% of Gasoline Net Revenues		*65,166	*30,329	*95,495
Net Operating Expenses after deducting for proportion of Gasoline Net Earnings		$229,654	$141,825	$371,479
Gross Income		$767,935	$390,655	$1,158,590
Income Taxes, estimated	Taxable Income	18,096	9,206	27,302
Net Earnings available for Depletion, Depreciation and Return		$749,839	$381,449	$1,131,288
Per Cent of Investment in Natural Gas Service		28.23	25.50	27.25

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United Fuel Gas Company, Inc., and Subsidiaries

Return on Investment After Deducting Depletion and Depreciation for the Year Ended December 31, 1923

Particulars	Investment	Net earnings available for depreciation, depletion, and return	Depreciation and depletion	Net earnings available for return	Per cent on investment
Depreciation and Depletion Computed on Company's Cost Basis	(1)	(2)	(3)	(4)	(5)
City of Charleston	$3,640,051	$787,055	$150,185*	$636,870	17.49
City of Huntington	2,434,396	342,433	100,874*	241,559	9.92
City of Williamson	312,059	53,581	12,891*	40,690	13.04
Other West Virginia	1,891,761	384,304	77,720*	306,584	16.20
Total West Virginia	$8,278,267	$1,567,373	$341,670*	$1,225,703	14.81
Kentucky and Ohio	4,151,817	1,131,288	171,461*	959,827	23.11
Wholesale Service	17,848,828	3,805,000	738,408*	3,067,201	17.18
Total Natural Gas Service	$30,278,912	$6,504,270	$1,251,539*	$5,252,731	17.34
Depletion and Depreciation Computed on Basis of Exhibits Filed Herewith					
City of Charleston	$3,640,051	787,055	$167,907*	$619,148	16.94
City of Huntington	2,434,396	342,433	112,778*	229,655	9.43

City of Williamson	312,059	53,581	14,412*	39,169	12.55
Other West Virginia	1,891,761	384,304	86,892*	297,412	15.72
Total West Virginia	$8,278,267	$1,567,373	$381,989*	$1,185,384	14.32
Kentucky and Ohio	4,151,817	1,131,288	191,694*	939,594	22.63
Wholesale Service	17,848,828	3,805,999	825,544*	2,980,065	16.69
Total Natural Gas Service	$30,278,912	$6,504,270	$1,399,227*	$5,105,043	16.86

[*Red in copy.]

[fol. 1793]

JUDICIAL EXHIBIT NO. 2-A

United Fuel Gas Company, Inc., and Subsidiaries

Return on Investment After Deducting Depletion and Depreciation for the Year Ended December 31, 1923

Particulars	Investment	Net earnings available for depletion, depreciation, and return	Depletion and depreciation	Net earnings available for return	Per cent of investment
Depletion and Depreciation Computed on Company's Cost Basis					
City of Charleston	$3,640,051	$787,055	$150,185*	$636,870	17.49
City of Huntington	2,434,396	342,433	100,874*	241,559	9.92
City of Williamson	312,059	53,581	12,891*	40,690	13.04
Other West Virginia	1,891,761	384,304	77,720*	306,584	16.20
Total West Virginia	$8,278,267	$1,567,373	$341,670*	$1,225,703	14.81
Ashland and Catlettsburg, Kentucky District	2,656,094	749,839	109,752*	640,087	24.10
Ohio Districts	1,495,723	381,449	61,709*	319,740	21.38
Wholesale Service	17,848,828	3,805,609	738,408*	3,067,201	17.18
Total Natural Gas Service	$30,278,912	$6,504,270	$1,251,539*	$5,252,731	17.34
Depletion and Depreciation Computed on Basis of Exhibits Filed Herewith					
City of Charleston	$3,640,051	$787,055	$167,907*	$619,148	16.94
City of Huntington	2,434,396	342,433	112,778*	229,655	9.43

City of Williamson	312,059	53,581	14,412*	39,169	12.55
Other West Virginia	1,891,761	384,304	86,892*	297,412	15.72
Total West Virginia	$8,278,267	$1,567,373	$381,989*	$1,185,384	14.32
Ashland and Catlettsburg, Kentucky District	2,656,094	749,839	122,703*	627,136	23.61
Ohio Districts	1,495,723	381,449	68,991*	312,458	20.89
Wholesale Service	17,848,828	3,805,609	825,544*	2,980,065	16.69
Total Natural Gas Service	$30,278,912	$6,504,270	$1,399,227*	$5,105,043	16.86

(*Red in copy.)

[fol. 1794] JIRGAL EXHIBIT No. 3

United Fuel Gas Company, Inc., and Subsidiaries

Report on Book Value of Acreage as of December 31, 1923

[fol. 1795] Telephone Randolph 5386

Arthur Anderson & Co., Certified Public Accountants, Harris Trust Building, Chicago

Chicago, New York, Milwaukee, Washington, Kansas City

December 27, 1924.

Mr. H. D. Rummel, Attorney-at-law, Charleston, West Virginia.

DEAR SIR: In a report submitted to you under date of December 27, reference is made to a separate report on the acreage investment as reflected by the books of the United Fuel Gas Company, Inc. and its subsidiaries. In order that you may understand more clearly the make-up of the original and present book value of the acreage, it is necessary to give some details of the history of the company.

History and Organization

The original United Fuel Gas Company was organized on March 2, 1903, and up to the year 1909 had issued only $250,000.00 of capital stock. In the latter year it was reorganized by the formation of the United Fuel Gas Company, Inc., the present company, and the authorized capital stock was increased from $250,000.00 to $10,000,000.00. At the time of reorganization, the present company apparently took over the book assets of the old company and assumed its liabilities. The opening entries placed on the books of the new company as of July 1, 1909 were as follows:

Assets

United Fuel Gas Company—Investment Suspense Account	$990,694.91
Gas Lines	22,188.18
Cash	32,304.92
Receivables from Agents	28,825.24
Ohio Fuel Supply Company	40,000.00
Total	$1,114,013.25

Liabilities

Capital Stock	$250,000.00
Due Ohio Fuel Supply Company	778,121.23
Payroll and Vouchers Payable	85,892.02
Total	$1,114,013.25

[fol. 1796] No investigation has been made of the books of the predecessor company to determine the source of the book value of $990,694.91, but the records of the new company state that 277,-997.69 acres of leasehold rights and a few wells were acquired from the old company. The account with the Ohio Fuel Supply Company was liquidated by the issuance of $750,000.00 in capital stock, thus bringing the issued stock to $1,000,000.00.

The new company, shortly after its organization, acquired the property of the United States Natural Gas Company and certain of its subsidiaries and considerable acreage from the Hope Natural Gas Company. These acquisitions together with the property owned by the prior company form the nucleus of the present system.

The property of the United States Natural Gas Company and certain of its subsidiaries was acquired on September 3, 1909, but the accounting under the purchase contract was made as of May 31, 1909. The contract of purchase was originally made on July 15, 1909 by M. C. Treat and George W. Crawford, who later assigned their rights to the Ohio Fuel Supply Company, which company in turn directed that conveyance be made to the United Fuel Gas Company. The original contract with Messrs. Treat and Crawford provided for a cash consideration of $2,081,250.00 and the assumption by the purchasers of all of the liabilities of the United States Natural Gas Company and those of the subsidiaries covered by the purchase. The company received for the above consideration all of the physical property and rights of the United States Natural Gas Company and those particular subsidiaries together with the other assets in the form of receivables, materials, etc., owned by them.

The purchase was recorded on the books of the United Fuel Gas Company as follows:

Suspense Purchase Account		$6,849,297.10
Sundry Asset Accounts		266,822.60
		$7,116,119.70
Deduct Liabilities Assumed:		
Mortgage Bonds	$2,904,500.00	
Real Estate Mortgage	5,000.00	
Bills Payable	61,000.00	
Sundry Liabilities	71,720.95	
		3,042,220.95
Difference—Shown as Property Purchase Account		$4,073,898.75

[fol. 1797] It is our understanding that the amounts shown above for the various assets conveyed and the liabilities assumed were taken from the books of the United States Natural Gas Company and those of the subsidiaries covered by the agreement. It will be noted that the net amount shown in the property purchase account was $4,073,-898.75 as compared with the actual cash consideration of $2,081,-250.00 paid by Treat and Crawford. The difference between the

amount taken up on the books and the cash consideration was accordingly $1,992,648.75 arrived at as follows:

Amount taken up on books	$4,073,898.75
Cash Consideration	2,081,250.00
Difference	$1,992,648.75

The United States Natural Gas Company's property consisted of 143,742.48 acres of leasehold and fee rights and also a natural gas transmission and distribution system.

On June 30, 1910, the Hope Natural Gas Company deeded to the United Fuel Gas Company, its rights in 614,200.71 acres of gas and oil land and some minor property. The accounting in connection with the property was, as in the case of the United States Natural Gas Company, for some time prior to the actual date of the deeds. This acquisition was taken up on the books of the United Fuel Gas Company at $3,200,741.86. The actual cash consideration, if any, is not shown by the records.

Both the Hope Natural Gas Company and the Ohio Fuel Supply Company advanced considerable sums to the United Fuel Gas Company for development and other purposes, and in July, 1910, all of these advances and also the property purchase accounts were settled by the issuance directly or to third parties of $5,000,000.00 in Capital Stock and $3,392,072.90 in debenture bonds. The transaction was recorded on the books of the company as follows:

[fol. 1798] Accounts Settled

United States Natural Gas Company Acquisition	$4,073,898.75
Hope Natural Gas Company Acquisition	3,200,741.86
Bills Payable	200,000.00
Amount due Hope Natural Gas Company	368,984.17
Amount due Ohio Fuel Supply Company	438,653.18
Profit and Loss Suspense	41,577.98
Interest and Exchange	68,216.96
Total	$8,392,072.90

Securities Issued

Capital Stock	$5,000,000.00
6% Debenture Bonds	3,392,072.90
Total	$8,392,072.90

It will be noted that the United States Natural Gas Company and Hope Natural Gas Company purchases were included in this settlement at the amounts already referred to in the preceding pages of this report.

The distribution of the securities listed above was made as follows:

Particulars	Debentures	Stock
The Ohio Fuel Supply Company	$1,587,854.83	$1,000,000
The Hope Natural Gas Company	569,726.03	.....
Alfred C. Bedford or to whom he may direct	1,028,392.04	4,000,000
Standard Oil Company of New York	206,100.00	.....
Total	$3,392,072.90	$5,000,000

As already noted in the preceding paragraphs, the United States Natural Gas Company and Hope Natural Gas Company acquisitions were recorded on the books at values which apparently had no reference to any cash consideration involved. Later on the book value of the acreage taken over from the old United Fuel Gas Company was also placed in the same account with these acquisitions. An appraisal was apparently made of the physical property (transmission and distribution lines, wells, etc) acquired aside from the acreage, and the balance of the book value placed on the total property was considered as applying to such acreage. This acreage was first given a value of $5.00 per acre at about the time of acquisition, but this left approximately $2,000,000.00 in the property account as unassignable (fol. 17799) to any tangible property. In 1911 the officers of the company placed a value on each leasehold or other property rights ranging from $1.00 to $50.00 per acre, the aggregate of which values exactly absorbed the valuations placed upon the properties acquired. The valuation per acre for the more important districts is shown on page 14.

In all, 1,056,443.58 acres were valued in this manner and the total valuation assigned was $7,233,538.96. The acreage was divided between the three companies from whom it was acquired as follows:

United Fuel Gas Company (old company)	277,997.69
United States Natural Gas Company	143,742.48
Hope Natural Gas Company	614,200.71
Miscellaneous	20,502.70
Total	1,056,443.58

For the purpose of this valuation, all of the acreage which had already been charged off to expense on account of abandonments, amounting to about 500,000 acres, was replaced on the books and charged off again at an assigned valuation of approximately $1.00 per acre.

The following statement gives a summary of the changes which have occurred in the acreage investment account from the original acquisition of the properties of the United States Natural Gas Company, the Hope Natural Gas Company and the old United Fuel Gas Company to December 31, 1923:

Particulars	Operated acreage		Unoperated acreage	
	Acreage	Amount	Acreage	Amount
Leases Acquired				
Original Purchase from United States, Hope Natural and United Fuel (old) Companies*	21,519.99	$834,148.80	1,034,923.59	$6,399,390.16
Properties Acquired Subsequent to Original Acquisitions	3,508.50	162,671.67	65,720.50	331,714.02
Miscellaneous Leasehold Acquisitions	3,525.94	67,225.77	1,028,132.15	1,031,447.25
Total	28,554.43	$1,064,046.24	2,128,776.24	$7,762,551.43
Leases Abandoned, Sold, Transferred, etc.				
Leases Abandoned	6,092.69†	$51,575.66†	1,299,556.77†	$1,591,583.41†
Oil Rights Sold	199.00†	534.70†	1,548.83†	79,658.40†
Transfers to or from Unoperated Acreage	55,674.26	1,389,888.95	55,674.26†	1,389,888.95†
Sale of Properties, Inventory Adjustment, Etc.	9,135.28†	154,321.77†	25,986.42†	22,586.14
Total	40,346.29	$1,183,456.82	1,382,766.28†	$3,038,544.62†
Book value at December 31, 1923	68,900.72	$2,247,503.06	746,009.96	$4,724,006.81
Add Operated Acreage			68,900.72	2,247,503.06
Total Acreage Value per Books			814,910.68	$6,971,509.87

*Summarized as follows:

	Acreage	Amount
Operated Acreage	21,519.99	$834,148.80
Unoperated Acreage	1,034,923.59	6,399,390.16
Total	1,056,443.58	$7,233,538.96

(Filed in copy.)

Although it appears from this statement that approximately 1,000,000 acres have been acquired at a cost of about $1.00 per acre, since the original acquisition of the properties, it will be shown later in this report that the amount included in the investment account is in excess of the actual cost of such acreage.

[fol. 1891] The leases abandoned since July 1, 1909 amounted to about 1,300,000 acres at a book cost that is slightly in excess of $1.00 per acre. The abandonments of operated territory are almost negligible.

During this period 55,674.26 acres having a book value of $1,389,888.95 have been transferred from unoperated to the operated acreage account.

The following statement shows an analysis of the items included in the table above under the caption of Miscellaneous Leasehold Acquisitions:

Particulars	Operated acreage		Unoperated acreage	
	Acres	Amount	Acres	Amount
New Leases	3,517.48	$56,019.25	932,662.14	$318,242.62
Renewal Payments	.....	.....	.....	340,543.41
Fee Property	8.46	11,206.52	2,076.70	231,089.30
Unaccounted For	.....	.....	93,393.31	141,571.92
Total	3,525.94	$67,225.77	1,028,132.15	$1,031,447.25
Add Operated Acreage	.....	.....	3,525.94	67,225.77
Total Acreage Acquired	.....	.....	1,031,658.09	$1,098,673.02

It is the practice of the company to add the cost of renewing leases to the existing book value of each lease. Inasmuch as the majority of leases are written for a ten year period, it appears that all of the original leases have been renewed at least once and our analysis shows that many have been renewed twice. If the company had retired the book value of the leases at the date of their first expiration, the entire original valuation of the unoperated acreage amounting to $6,399,390.16, less any acreage which became operated territory before the expiration of the lease, would have been removed from the investment account.

It will be noted from the table above that 932,662.14 acres were acquired at a cost of $318,242.62 or an average of 34 cents per acre. We have made a complete analysis of these acquisitions by years and by districts from 1910 to 1923, and have abstracted the following summary from our detailed sheets on pages 21 to 27, inclusive:

[Ed. 1862] Particulars	New leases acquired		Average cost per acre
	Acres	Amount	
West Virginia:			
1910 to 1914	307,012.63	$84,235.84	$0.27
1915 to 1920	320,454.09	161,435.83	0.50
1921 to 1923	62,032.24	51,773.56	0.83
Total West Virginia	689,498.96	$297,445.23	$0.43
Kentucky:			
1910 to 1914	107,092.58	$10,783.86	$0.10
1915 to 1920	91,937.10	5,339.92	0.06
1921 to 1923	32,493.00	2,858.87	0.09
Total Kentucky	231,522.68	$18,982.65	$0.08
Ohio:			
1910 to 1914	11,640.50	$1,814.74	$0.16
Total all States:			
1910 to 1914	425,745.71	$96,834.44	$0.23
1915 to 1920	412,391.19	166,775.75	0.40
1921 to 1923	94,525.24	54,632.43	0.58
Total	932,662.14	$318,242.62	$0.34

The highest average cost per acre in this table is 83 cents in West Virginia in the period from 1921 to 1923. This period includes an extraordinary payment of $25,000.00 for 70 acres in Big Sandy district without which the average price for West Virginia during this period would be 43 cents per acre.

In our analysis of the leasehold account, which covered 90% of the acreage acquired from July 1, 1909 to December 31, 1923, it was

observed that the bonus payments bear a definite relationship to the delayed rental payment. In unproven territory where the annual rental charges are $1.00 per acre, the bonus payment amounts to one quarterly rental or 25 cents per acre. In proven territory the annual rental charges range from $150 to $500 per well site, and one annual rental is paid as a bonus. It is the practice of the company to allot 100 acres to a well site, although this basis varies considerably with the number of acres in the lease.

The prices in the table above are low because very little new territory has been acquired in the producing districts since the original acquisitions. The prices paid for territory in Kentucky average about 50 cents per year per acre in rentals with a bonus of 10 cents per acre.

[fol. 1803] It was also observed that a large number of leases in unproven territory are renewed for the nominal sum of $1.00 as a bonus, which accounts for the fact that the renewals payments charged to the investment account during the entire period have amounted to less than $50,000.00 as shown in the table on page 7.

The following statement has been compiled from a study of specific leases in several of the more important districts which are shown in detail on pages — to —:

Particulars

Big Sandy District	Acres	Amount	per acre
Original Valuation	5,400.67	$161,937.08	$29.67
Renewals 1910-1921, Inclusive	5,417.67	5,335.79	.98
Renewals 1922-1924, Inclusive	5,400.67	24,591.41	4.50
Curtis District:			
Original Valuation	1,008.00	34,706.00	31.54
Renewals 1910-1921, Inclusive	438.50	567.00	1.29
Renewals 1922-1924, Inclusive	1,008.00	1,323.75	1.31
Geary District:			
Original Valuation	3,541.75	148,170.67	41.84
Renewals 1910-1921, Inclusive	3,487.75	3,457.61	.99
Renewals 1922-1924, Inclusive	3,541.75	17,507.75	4.94
Smithfield District:			
Original Valuation	3,527.00	160,686.30	45.55
Renewals 1910-1921, Inclusive	3,361.10	2,954.41	.88
Renewals 1922-1924, Inclusive	3,527.00	10,273.03	2.91
Spencer District:			
Original Valuation	203.75	6,986.50	34.34
Renewals 1910-1921, Inclusive	191.75	178.75	.93
Renewals 1922-1924, Inclusive	203.75	205.00	1.01
Walton District:			
Original Valuation	1,221.83	63,975.00	52.36
Renewals 1910-1921, Inclusive	1,183.25	883.68	.76
Renewals 1922-1924, Inclusive	1,200.33	5,905.49	4.92
Summary:			
Original Valuation	14,903.00	573,507.55	38.37
Renewals 1910-1921, Inclusive	14,079.02	13,387.24	.95
Renewals 1922-1924, Inclusive	14,941.10	59,807.03	4.00

The summary of this statement shows that the original valuation placed upon the acreage in these districts was 40 times in excess of the renewal cost of the same acreage in the period from 1910 to 1921, and almost 10 times the renewal cost of the same acreage in the period from 1922 to 1924.

[fol. 1804] It will also be noted that 14,079.02 acres out of 14,963.60 acres considered in this analysis have been renewed twice.

The following table is presented to show that the greater portion of the original valuation given to the unoperated acreage is located in the districts which are analyzed above:

Particulars	Acres	Amount	Book value per acre
Big Sandy District	43,020.90	$966,969.55	$22.82
Curtis District	18,398.50	363,246.00	19.74
Geary District	55,904.33	1,644,508.05	29.37
Smithfield District	40,475.20	1,052,748.58	26.00
Spencer District	36,551.22	428,472.80	11.72
Walton District	25,545.59	824,870.50	32.29
Total Districts Above	220,055.74	$5,310,936.08	$24.07
All Other Districts	814,267.85	1,088,454.08	1.34
Total Unoperated Acreage	1,034,323.59	$6,399,390.16	$6.18

It is apparent from this statement that $5,310,936.08 or 83% of the total valuation of $6,399,390.16 assigned to the unoperated acreage is located in the six districts which we have analyzed in detail.

Conclusions on Book Value of Acreage

From the analysis of the acreage accounts presented in the foregoing paragraphs, it would appear:

(1) That the original book valuation assigned to the acreage did not represent the original cash cost to the present company or in all probability to the predecessor companies from which such acreage was acquired.

(2) That both the original value and the book value at present are probably considerably in excess of what would be found as the original cost were the records available.

In support of the conclusion reached above, the following facts are summarized from the preceding discussion:

(a) The original book valuation of the property acquired from the United States Natural Gas Company was approximately $2,000,000 in excess of the cash consideration paid and the liabilities assumed by Messrs. Treat and Crawford through whom the properties were acquired.

(b) The bonus or leasehold payments on acreage renewed shortly after the original purchase were considerably less than the original valuation assigned.

[fol. 1805] (c) The company has included in its property account, both the original value placed upon the acreage and the bonus paid upon any renewals to date. Practically all of the acreage has been renewed at least once and in numerous instances twice since the original purchase.

(d) The cost of reproducing the acreage today on a bonus payment basis is evidently less than the book value.

Rentals and Leasehold Expense

In Connection With Unoperated Acreage

It should be pointed out that the acreage investment accounts are designed to reflect the bonus or first payment on a leasehold right. If a well is not drilled on the lease at once as is usually the case, a delayed rental is paid by the company to the lessor. If a well is drilled and gas is found, the company pays a royalty to the lessor. Both the rental on unoperated acreage and the royalties are included in the operating expenses of the company. There is also included whatever expense is attendant to securing the lease. The carrying charges in the form of rentals on the unoperated acreage being included in the operating expenses are a part of the cost on which the present rates of the company have been determined. In order that the importance of the items of leasehold expense and unoperated acreage rentals may be noted, there is presented below a statement showing that part of these items which is assignable to the gas department after a part of the total has been allocated to the oil department:

Period	Leasehold expense	Rentals on unoperated acreage	Total
Six Months ended December 31, 1909	$10,806.53	$69,864.14	$80,670.67
Year ended December 31—			
1910	49,437.20	344,766.60	394,203.80
1911	50,617.37	345,119.24	395,736.61
1912	63,759.97	334,729.75	398,489.72
1913	63,821.19	383,015.36	446,836.55
1914	51,734.90	411,551.36	463,286.26
1915	41,411.05	448,851.22	490,262.27
1916	45,209.25	448,020.08	493,229.33
1917	32,538.49	470,940.22	503,478.71
1918	42,654.99	457,006.85	499,661.84
1919	42,921.95	499,209.37	542,131.32
1920	48,363.21	562,270.41	610,633.62
1921	42,037.82	578,143.95	620,181.77
1922	40,678.06	557,787.67	598,465.73
1923	42,370.69	546,815.44	589,186.13
Total	$668,362.67	$6,458,091.66	$7,126,454.33

[fol. 1896] On an 8% capitalization basis, the amount paid for rentals and included in operating expenses for the year 1923 would support a value of $6,830,000.00. The combined items of leasehold expense and rentals would support a value of $7,360,000.00 on the same basis.

If you desire any further information in addition to that included above, we will be glad to secure same from our working papers.

Very truly yours, Arthur Anderson & Co., Certified Public Accountants.

UNITED FUEL GAS C

VALUATION PLACE

UNITED STATES NATURAL

AND UNITED FUEL GAS COMP

Particulars	West Acres
OPERATED ACREAGE:	
Leaseholds-	
Gas and Oil Rights	12,493.
Gas Rights- South Penn Oil Company Owns Oil	5,469.
Gas Rights- Ohio Fuel Supply Company Owns Oil	911.
Gas Rights- Others Own Oil Rights	1,604.
Total Leaseholds	20,478.
Mineral and Gas Rights in Fee	1,043.
Total Operated Acreage	21,51[illegible]
UNOPERATED ACREAGE:	
Leaseholds-	
Gas and Oil Rights	82,348
Gas Rights- South Penn Oil Company Owns Oil	597,6[illegible]
Gas Rights- Ohio Fuel Supply Company Owns Oil	243,6[illegible]
Gas Rights- Others Own Oil Rights	25,9[illegible]
Total Leaseholds	920,7[illegible]
Mineral and Gas Rights in Fee-	
Gas and Oil Rights	67[illegible]
Gas Rights Others Own Oil Rights	6,8[illegible]
Mineral Rights	2,07[illegible]
Total Mineral and Gas Rights in Fee	9,5[illegible]
Real Estate and Surface Rights	13,[illegible]
Total Unoperated Acreage	944,[illegible]
Total Acreage	965,7[illegible]

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

VALUATION PLACED UPON ACREAGE ACQUIRED FROM

UNITED STATES NATURAL GAS COMPANY, HOPE NATURAL GAS COMPANY

AND UNITED FUEL GAS COMPANY (OLD COMPANY) AT DATE OF ORGANIZATION

West Virginia		Ohio		Kentucky		Total	
Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
12,493.38	$ 462,515.85	-	$ -	-	$ -	12,493.38	$ 462,515.85
5,469.00	205,036.00	-	-	-	-	5,469.00	205,036.00
911.75	40,687.80	-	-	-	-	911.75	40,687.80
1,604.00	80,200.00	-	-	-	-	1,604.00	80,200.00
20,478.10	$ 788,439.35	-	$ -	-	$ -	20,478.10	$ 788,439.35
1,041.89	48,709.45	-	-	-	-	1,041.89	48,709.45
21,519.99	$ 834,148.80	-	$ -	-	$ -	21,519.99	$ 834,148.80
82,348.83	$ 975,643.27	5,516.75	$5,516.75	84,466.77	$84,466.77	143,332.38	$1,065,626.79
397,658.03	3,246,172.20	-	-	270.00	270.00	397,928.03	3,246,442.20
243,855.96	1,840,185.22	-	-	-	-	243,855.96	1,840,185.22
25,891.93	498,826.68	-	-	-	-	25,891.93	498,826.68
980,731.75	$6,960,827.37	5,516.75	$5,516.75	84,736.77	$84,736.77	1,011,005.27	$6,050,820.89
670.84	$ 24,601.80	-	$ -	460.00	$ 460.00	1,130.84	$ 25,061.80
6,862.40	277,134.70	-	-	-	-	6,862.40	277,134.70
2,079.41	5,636.53	-	-	-	-	2,079.41	5,636.53
9,572.35	$ 308,371.73	-	$ -	460.00	$ 460.00	10,032.35	$ 308,831.73
13,886.97	$ 42,737.84	-	$ -	-	$ -	13,886.97	$ 42,737.84
944,810.07	$6,308,676.64	5,516.75	$5,516.75	83,196.77	$83,196.77	1,034,922.59	$6,397,390.16
963,730.06	$7,142,825.44	5,516.75	$5,516.75	83,196.77	$83,196.77	1,056,443.58	$7,231,538.96

1607

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING VALUE ASSIGNED TO ACREAGE ACQUIRED

FROM UNITED STATES NATURAL GAS COMPANY, HOPE NATURAL GAS COMPANY

AND UNITED FUEL GAS COMPANY (OLD COMPANY) BY IMPORTANT DISTRICTS

Line No.	County	District	Leasehold — Oil and Gas Rights — Acres	Cost	Amount	Leasehold — Gas - Others Own Oil Rights — Acres	Cost	Amount	Property Owned in Fee — Mineral and Gas Rights — Acres	Cost	Amount	Property Owned in Fee — Real Estate — Acres	Cost	Amount	Total — Acres	Cost	Amount	Line No.
(1)	OPERATED ACREAGE:																	(1)
(2)	Kanawha	Big Sandy	1,700.00	$47.16	$ 80,180.00	1,169.00	$39.73	$ 46,450.00	-	$ -	$ -	-	$ -	$ -	2,869.00	$44.14	$ 126,630.00	(2)
(3)	Roane	Curtis	-	-	-	2,374.00	50.00	118,700.00	-	-	-	-	-	-	2,374.00	50.00	118,700.00	(3)
(4)	Roane	Geary	4,268.50	50.00	213,425.00	1,460.00	50.00	73,000.00	444.59	45.46	20,222.95	-	-	-	6,173.09	49.67	306,647.95	(4)
(5)	Roane	Smithfield	1,440.00	50.00	72,000.00	397.00	30.00	11,946.00	-	-	-	-	-	-	1,837.00	45.70	83,946.00	(5)
(6)	Roane	Spencer	-	-	-	541.00	50.00	27,050.00	-	-	-	-	-	-	541.00	50.00	27,050.00	(6)
(7)	Roane	Walton	1,874.00	50.00	93,700.00	1,743.75	27.60	48,477.50	597.30	42.67	25,486.50	-	-	-	4,215.05	39.77	167,664.00	(7)
(8)	All Others		3,210.85	1.00	3,210.85	300.00	1.00	300.00	-	-	-	-	-	-	3,510.85	1.00	3,510.85	(8)
(9)																		(9)
(10)	Total Operated		12,493.35	$37.02	$ 462,515.85	7,984.75	$40.81	$ 325,923.50	1,041.89	$45.67	$ 45,709.45	-	-	$ -	21,519.99	$36.76	$ 834,148.80	(10)
(11)																		(11)
(12)																		(12)
(13)	UNOPERATED ACREAGE:																	(13)
(14)	Clay	Union	2,570.71	$11.86	$ 30,502.65	10,830.75	$20.58	$ 20,850.75	714.21	$ 1.00	$ 714.21	1,016.00	$ 1.00	$ 1,016.00	14,531.67	$36.83	$ 53,083.61	(14)
(15)	Kanawha	Big Sandy	7,431.75	27.04	200,956.75	35,833.69	22.36	787,693.50	384.09	13.39	5,140.45	841.37	5.00	5,206.85	43,690.90	22.82	998,999.55	(15)
(16)	Kanawha	Elk	778.50	22.69	17,504.50	125,350.13	23.87	299,160.97	-	-	-	-	-	-	126,128.63	25.10	316,665.47	(16)
(17)	Jackson	Washington	58.00	1.00	58.00	15,453.80	17.70	27,355.00	-	-	-	-	-	-	15,511.80	17.67	27,413.00	(17)
(18)	Roane	Curtis	-	-	-	18,398.50	19.74	363,246.00	-	-	-	-	-	-	18,398.50	19.74	363,246.00	(18)
(19)	Roane	Geary	9,907.16	36.59	360,291.60	40,196.84	27.08	1,088,365.10	3,788.37	43.17	163,526.86	2,101.94	5.91	12,415.10	55,994.33	29.37	1,644,598.65	(19)
(20)	Roane	Harper	-	-	-	18,287.00	27.23	49,795.75	-	-	-	-	-	-	18,287.00	27.23	49,795.75	(20)
(21)	Roane	Reedy	-	-	-	13,856.00	11.21	15,545.50	-	-	-	-	-	-	13,856.00	11.21	15,545.50	(21)
(22)	Roane	Smithfield	3,817.00	49.43	188,675.00	36,631.50	23.56	863,940.08	26.70	5.00	133.50	-	-	-	40,475.20	26.00	1,052,748.58	(22)
(23)	Roane	Spencer	-	-	-	36,429.16	11.75	427,862.50	122.06	5.00	610.30	-	-	-	36,551.22	11.72	428,472.80	(23)
(24)	Roane	Walton	2,629.84	50.00	131,497.00	19,414.83	27.96	543,190.25	3,174.84	42.17	133,884.25	325.98	50.00	16,299.00	25,545.59	32.29	824,870.50	(24)
(25)	All Others		116,139.29	1.00	116,139.29	498,188.70	1.00	498,188.70	1,822.17	1.00	1,822.17	9,800.59	1.00	9,800.59	626,950.75	1.00	626,950.75	(25)
(26)																		(26)
(27)	Total Unoperated		143,332.35	$ 7.44	$1,065,626.79	867,672.95	$ 5.75	$4,985,194.10	10,032.44	$30.46	$305,831.73	13,885.88	$ 3.08	$42,737.54	1,034,923.89	$ 6.16	36,399,390.16	(27)
(28)																		(28)
(29)	Total Acreage		155,825.70	$ 9.80	$1,528,142.64	875,657.67	$ 6.06	$5,311,117.60	11,074.33	$31.76	$351,541.18	13,885.88	$ 3.08	$42,737.54	1,056,443.58	$ 6.85	37,233,538.96	(29)
(30)																		(30)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

BOOK COST AND DISTRIBUTION OF OPERATED ACREAGE

AS OF DECEMBER 31, 1925

Particulars	West Virginia		Kentucky		Total	
	Acres	Amount	Acres	Amount	Acres	Amount
OPERATED GAS ACREAGE:						
Leaseholds-						
Gas and Oil Rights	14,118.46	$ 458,982.11	286.00X	$ 19.84	13,852.46	$ 458,971.65
Gas Rights- Virginian Gasoline and Oil Company Owns Oil Rights	17,405.50	479,911.24	4,601.50	3,822.37	22,007.00	483,733.61
Gas Rights- South Penn Oil Company Owns Oil Rights	17,791.06	640,514.10	-	-	17,791.06	640,514.10
Gas Rights- Ohio Fuel Oil Company Owns Oil Rights	5,349.77	154,646.19	-	-	5,349.77	154,646.19
Gas Rights- Other Parties Own Oil Rights	6,691.97	177,680.25	-	-	6,691.97	177,680.25
Total Leaseholds	61,356.76	$1,911,703.89	4,315.50	$3,841.91	65,672.26	$1,915,545.80
Mineral Rights and Holdings in Fee-						
Gas and Oil Rights in Fee	60.84	$ 1,372.55	-	$ -	60.84	$ 1,372.55
Gas Rights in Fee	621.75	6,209.17	-	-	621.75	6,209.17
Gas Rights in Fee - Virginian Gasoline and Oil Company Owns Oil Rights	2,199.49	83,564.62	-	-	2,199.49	83,564.62
Absolute in Fee - Virginian Gasoline and Oil Company Owns Oil Rights	232.45	575.00	-	-	232.45	575.00
Absolute in Fee - Other Parties Own Oil Rights	42.45	875.00	-	-	42.45	875.00
Fee Minerals - Virginian Gasoline and Oil Company	71.50	1,283.00	-	-	71.50	1,283.00
Total Fee Property	3,228.46	$ 93,849.34	-	$ -	3,228.46	$ 93,849.34
Total Operated Gas Acreage	64,585.22	$2,005,553.23	4,315.50	$3,841.91	68,900.72	$2,009,395.14
OPERATED OIL ACREAGE (Total Book Value Assigned to Virginian Gasoline and Oil Company):						
Oil Rights- United Fuel Gas Company Owns Gas Rights	10,028.55	$ 238,145.87	327.60	$ 90.60	10,356.15	$ 238,236.47
Mineral and Gas Rights in Fee	127.45	2,871.45	-	-	127.45	2,871.45
Total Operated Oil Acreage	10,156.00	$ 238,017.32	327.60	$ 90.60	10,483.60	$ 238,107.92
Total Operated Acreage	74,741.22	$2,243,570.55	4,643.10	$3,932.51	79,384.32	$2,247,503.06

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

1095

BOOK COST AND DISTRIBUTION OF UNOPERATED ACREAGE AS OF DECEMBER 31, 1925

Particulars	West Virginia		Ohio		Kentucky		Totals	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
UNITED FUEL GAS COMPANY:								
Leaseholds-								
Oil and Gas Rights	79,628.20	$1,068,858.44	255.00	$ 63.75	29,812.50	$ 3,695.23	109,695.70	$1,072,617.42
Gas Rights- Virginian Gasoline and Oil Company Owns Oil Rights	282,316.45	837,348.55	-	-	75,308.35	24,921.94	357,624.80	862,270.49
Gas Rights- South Penn Oil Company Owns Oil Rights	126,697.55	1,489,755.80	-	-	-	-	126,697.55	1,489,755.80
Gas Rights- Ohio Fuel Oil Company Owns Oil Rights	77,163.15	243,844.63	-	-	-	-	77,163.15	243,844.63
Gas Rights- Other Parties Own Oil Rights	36,060.45	321,837.93	-	-	-	-	36,060.45	321,837.93
Total Leaseholds	591,865.80	$3,961,345.35	255.00	$ 63.75	105,120.85	$28,617.17	697,241.65	$3,989,826.27
Mineral and Gas Rights-								
Oil and Gas in Fee	681.21	$ 97,431.10	-	$ -	-	$ -	681.21	$ 97,431.10
Gas in Fee- Virginian Gasoline and Oil Co. Owns Oil Rights	14,709.32	465,951.65	-	-	308.40	649.50	15,017.72	466,601.15
Gas in Fee- Ohio Fuel Oil Co. Owns Oil Rights	26.00	651.00	-	-	-	-	26.00	651.00
Gas in Fee	979.25	5,582.58	-	-	-	-	979.25	5,582.58
Oil in Fee	432.00	225.80	-	-	-	-	432.00	225.80
Minerals- Virginian Gasoline and Oil Co. Owns Oil Rights	13,259.32	41,570.81	-	-	-	-	13,259.32	41,570.81
Total Mineral and Gas Rights	30,087.10	$ 611,392.94	-	$ -	308.40	$ 649.50	30,395.50	$ 612,042.44
Real Estate-								
Absolute in Fee	48.93	$ 39,744.74	.14	$2,438.91	41.50	$ 6,692.55	90.57	$ 48,876.20
Absolute in Fee- Virginian Gasoline Oil Co. Owns Oil Rights	7,676.53	56,753.98	-	-	-	-	7,676.53	56,753.98
Surface Only	82.61	12,128.43	-	544.37	-	-	82.61	12,672.80
Miscellaneous	39.50	3,243.17	-	48.28	-	362.00	39.50	3,653.45
Total Real Estate	7,847.57	$ 111,870.32	.14	$3,028.56	41.50	$ 6,737.55	7,889.21	$ 121,636.43
Total United Fuel Gas Company	629,800.47	$4,684,608.61	255.14	$3,092.31	105,470.75	$35,824.22	735,526.36	$4,723,525.14
VIRGINIAN GASOLINE AND OIL COMPANY	-	481.67	-	-	-	-	-	481.67
Total Unoperated Acreage	629,800.47	$4,685,090.28	255.14	$3,092.31	105,470.75	$35,824.22	735,526.36	$4,724,006.81

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[illegible] FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING TOTAL ACREAGE ACQUIRED AND ABANDONED

FROM JULY 1, 1929 TO DECEMBER 31, 1932

Particulars	Leases Acquired		Leases Abandoned		Oil Rights Sold		Sale of Properties Inventory Adjustments, Etc.		Net Additions	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
PROPERTIES PURCHASED:										
United States Natural Gas Co.-										
Hope Natural Gas Co. and United Fuel Gas Company (Old Company)	1,056,443.58	$7,233,538.96	-	$ -	-	$ -	-	$ -	1,056,443.58	$7,233,538.96
Davenport Oil and Gas Co.	1,027.50	117,047.66	-	-	-	-	-	-	1,027.50	117,047.66
Interstate Gas Co.	9,720.00	186,789.60	×1,379.50	×107,241.24	-	-	×4,469.80	(A) 79,719.44	×329.00	×171.08
Cabin Creek Gas Company	8,005.00	112,500.00	-	-	-	-	-	-	8,005.00	112,500.00
Miscellaneous	50,476.50	78,048.43	-	-	-	-	-	-	50,476.50	78,048.43
Total Properties Purchased	1,115,672.58	$7,727,924.65	×1,379.50	$ 107,241.24	-	-	×4,469.80	$ 79,719.44	1,115,823.58	$7,540,963.97
NET ADDITIONS SINCE ORIGINAL PURCHASE OF PROPERTIES:										
Six Months Ended December 31, 1909	30,617.12	$ 16,215.21	-	$ -	-	$ -	-	$ -	30,617.12	$ 16,215.21
Year Ended December 31,-										
1910	109,680.66	36,976.96	×873.39	×1,641.76	-	×303.75	×14,954.57	(B)×26,000.00	93,882.70	9,031.48
1911	96,738.37	21,277.95	×818,913.73	×415,436.56	-	×2,310.62	-	-	×432,177.36	×396,469.22
1912	83,465.21	96,942.64	×44,639.80	×42,510.35	×883.25	×3,170.63	×14,294.58	(B)×3,322.30	24,007.28	41,933.66
1913	144,331.68	48,138.50	×41,972.23	×21,263.03	×679.00	×4,759.09	×1,356.76	(B) × 484.13	98,421.67	21,751.75
1914	30,657.44	52,497.07	×132,031.22	×138,578.55	× 15.25	×12,971.71	-	-	×101,409.03	×89,053.19
1915	89,570.64	71,366.73	×47,389.08	× 91,638.10	-	× 4,433.86	-	-	38,241.58	×24,479.23
1916	75,945.88	181,710.93	×112,641.65	×155,841.22	×132.00	×7,325.31	-	-	× 36,827.77	18,544.39
1917	68,397.25	110,374.56	×86,465.80	× 141,662.37	-	× 2,686.23	-	-	×20,068.25	×33,976.85
1918	12,301.69	37,051.24	×109,904.57	×171,077.47	-	×4,379.79	-	-	× 97,602.88	×138,805.02
1919	151,973.23	42,795.61	×49,899.21	× 66,201.46	-	×83,544.85	-	-	102,074.02	×48,750.72
1920	46,138.99	111,416.67	×23,459.29	× 38,124.61	-	×3,734.57	-	×500.00	22,669.70	69,007.49
1921	38,071.23	62,133.38	× 61,758.47	× 219,608.89	×215.00	×3,451.90	-	-	×23,902.24	×152,014.61
1922	27,718.98	97,892.02	×25,498.47	× 34,128.98	-	×157.77	×43.97	×15,769.76	2,179.72	47,765.56
1923	31,881.74	111,673.36	×12,589.58	× 14,116.61	×174.33	×7,931.02	-	-	19,020.83	89,625.73
Total Net Additions	1,031,696.09	$1,098,673.05	×1,504,006.96	×1,538,917.83	×1,048.63	×80,193.10	×30,652.20	×$ 50,010.19	×506,712.90	×$ 569,454.10
Total Acreage	2,147,330.67	$8,826,597.67	×1,505,649.46	×1,643,159.07	×1,048.63	×80,193.10	×35,121.70	×131,735.68	814,910.68	$6,971,509.87

A - Sale of Property to Columbia Gas and Electric Company.
B - Inventory Adjustments.

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT OF OPERATED ACREAGE ACQUIRED, ABANDONED

AND TRANSFERRED FROM JULY 1, 1909 TO DECEMBER 31, 1925

Particulars	Leases Acquired		Leases Abandoned		Oil Rights Sold		Transfers from Unoperated Acreage		Sale of Properties, Inventory Adjustments, Etc.		Net Additions	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
PROPERTIES PURCHASED:												
United States Natural Gas Co., Hope Natural Gas Co. and United Fuel Gas Co. (Old Company)	21,519.99	$ 834,148.80	-	$ -	-	$ -	-	$ -	-	$ -	21,519.99	$ 834,148.80
Davenport Oil and Gas Co.	1,027.50	117,047.66	-	-	-	-	-	-	-	-	1,027.50	117,047.66
Miscellaneous	2,481.00	48,624.01	-	-	-	-	-	-	-	-	2,481.00	48,624.01
Total Properties Purchased	25,028.49	$ 996,820.47	-	$ -	-	$ -	-	$ -	-	$ -	25,028.49	$ 996,820.47
NET ADDITIONS SINCE ORIGINAL PURCHASE OF PROPERTIES:												
Six Months Ended Dec. 31, 1909	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -
Year Ended Dec. 31,												
1910	-	-	-	-	-	-	850.00	1,706.96	-	-	850.00	1,706.96
1911	-	-	X1,317.00	X1,181.00	-	-	11,063.14	138,976.06	-	-	9,746.14	137,794.06
1912	1,001.00	5,944.88	X29.88	-	-	-	3,817.25	68,975.23	X5,799.26	X161,101.77*	X4,310.26	X86,181.66
1913	50.00	163.88	X898.18	X898.18	X100.00	X600.00	7,416.33	186,747.03	X336.00	6,780.00*	6,432.15	192,592.70
1914	13.66	474.60	X337.00	X982.00	-	-	6,302.91	182,082.55	-	-	5,979.57	181,596.15
1915	219.67	2,288.33	X605.00	X2,004.68	-	-	4,908.08	178,996.48	-	-	4,722.75	179,250.13
1916	25.30	18,896.56	-	X3,618.88	-	-	4,036.82	98,570.63	-	-	4,062.12	112,848.61
1917	409.00	9,004.28	X306.00	X780.13	-	-	9,866.32	226,858.73	-	-	9,970.32	235,082.89
1918	77.20	776.00	X293.00	X366.00	-	-	3,996.33	30,850.28	-	-	3,779.53	31,261.28
1919	234.00	7,918.64	26.41	1,136.00	-	-	1,686.50	34,665.72	-	-	1,946.91	43,717.36
1920	2.24	1,117.27	X936.13	X12,660.81	-	X25.00	3,124.71	55,097.15	-	-	2,386.83	43,723.91
1921	1,478.87	14,210.67	X1,034.05	X12,667.05	-	-	2,969.15	16,447.03	-	-	3,414.07	18,000.65
1922	14.90	7,277.43	X867.50	X4,803.91	-	-	X7,936.34	66,938.44	-	-	X8,678.94	69,411.96
1923	-	1,189.84	X613.00	X14,273.66	-	X8.70	3,874.06	122,976.70	-	-	3,361.06	109,878.58
Total Net Additions	3,522.94	$ 67,825.77	X5,082.69	X81,875.86	X100.00	X634.70	86,874.26	$1,380,888.96	X9,135.26	X154,321.77	43,872.23	$1,260,682.59
Total Operated Acreage	28,554.43	$1,064,046.24	X5,082.69	X81,875.86	X100.00	X634.70	86,874.26	$1,380,888.96	X9,135.26	X154,321.77	68,900.72	$2,247,503.06

*Inventory Adjustments

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING UNOPERATED ACREAGE ACQUIRED, ABANDONED AND TRANSF

FROM JULY 1, 1909 TO DECEMBER 31, 1923

Particulars	Leases Acquired		Leases Abandoned		Oil Rights Sold	
	Acres	Amount	Acres	Amount	Acres	Amount
PROPERTIES PURCHASED:						
United States Natural Gas Company, Hope Natural Gas Company, and United Fuel Gas Company (Old Company)	1,034,923.59	$6,399,390.16	-	$ -	-	$ -
Interstate Gas Company	9,730.00	186,789.60	X5,579.50	X107,241.24	-	-
Miscellaneous	47,995.50	32,424.42	-	-	-	-
Cabin Creek Gas Co.	8,005.00	112,500.00	-	-	-	-
Total Properties Purchased	1,100,644.09	$6,731,104.18	X5,579.50	$ 107,241.24	-	$ -
NET ADDITIONS SINCE ORIGINAL PURCHASE OF PROPERTIES:						
Six Months Ended December 31, 1909	30,817.12	$ 16,215.21	-	$ -	-	$ -
Year Ended December 31,						
1910	109,680.66	36,976.96	X 873.39	X 1,641.76	-	X303.75
1911	96,736.37	21,277.95	X527,596.73	X414,254.55	-	X2,310.62 X1
1912	82,464.21	90,997.96	X44,610.55	X 43,516.35	X 523.25	X2,170.63 X
1913	142,381.68	48,034.65	X41,374.05	X 20,665.55	X479.00	X4,259.09 X
1914	30,623.78	52,022.47	X131,694.22	X127,616.55	X 15.25	X12,971.71 X
1915	85,350.97	69,328.40	X 46,924.05	X 89,627.45	-	X 4,433.86 X
1916	75,920.58	164,814.37	X112,641.65	X 153,222.68	X 132.00	X 7,325.31 X
1917	67,988.25	101,370.27	X 88,160.60	X 140,882.28	-	X2,688.23 X
1918	12,224.49	36,275.24	X109,611.57	X 170,712.47	-	X 4,579.78 X
1919	151,739.23	34,878.95	X 49,925.62	X 69,336.48	-	X23,344.85 X
1920	46,126.75	110,299.40	X 22,729.17	X26,659.10	-	X 3,759.57 X
1921	36,592.26	47,922.71	X 80,724.42	X198,039.24	X228.00	X 3,451.90 X
1922	27,704.06	90,544.59	X 24,937.77	X 29,325.02	-	X 137.77
1923	31,881.74	110,488.12	X 12,173.58	157.05	X174.33	X 7,921.32
Total Net Additions	1,028,132.15	$1,031,447.25	X1,293,977.27	X$1,484,342.17	X1,548.83	X$79,658.40 X
Total Unoperated Acreage	2,128,776.24	$7,762,551.43	X1,299,556.77	X$1,591,583.41	X1,548.85	X$79,658.40 X

(A) Sale of Property to Columbia Gas and Electric Co
(B) Inventory adjustments.

(X Denotes red in copy.)

ND SUBSIDIARIES

D. ABANDONED AND TRANSFERRED

R 31, 1923

Oil Rights Sold		Transfers to Operated Acreage		Sale of Properties, Inventory Adjustments, Etc.		Net Additions	
Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
-	$ -	-	$ -	-	$ -	1,034,923.89	$6,399,390.16
-	-	-	-	×4,469.50	×79,719.44(A)	×329.00	×171.08
-	-	-	-	-	-	47,995.80	32,424.42
-	-	-	-	-	-	8,008.00	112,500.00
-	$ -	-	$ -	×4,469.50	$ 79,719.44	1,090,595.09	$6,544,143.50
-	$ -	-	$ -	-	$ -	30,617.12	$ 16,215.21
-	×303.75	×850.00	×1,706.95	×14,994.57	×88,000.00(B)	93,002.70	7,324.50
-	×2,310.62	×11,063.14	×138,976.05	-	-	×441,923.50	×534,263.27
×523.25	×2,170.63	×3,517.25	×68,975.23	×5,495.60	151,779.47(B)	28,317.56	128,115.22
×479.00	×4,259.09	×7,416.33	×186,747.03	×1,022.78	×7,204.13(B)	91,989.52	×170,840.95
×15.25	×12,971.71	×6,302.91	×162,082.55	-	-	×107,388.60	×250,648.34
-	×4,433.86	×4,908.08	×178,996.48	-	-	33,518.84	×205,729.30
×132.00	×7,325.31	×4,036.82	×96,570.68	-	-	×40,889.89	×94,304.22
-	×2,688.23	×9,866.32	×226,658.73	-	-	×50,036.57	×269,068.94
-	×4,579.79	×3,998.33	×30,850.26	-	-	×101,382.41	×169,667.28
-	×23,344.85	×1,686.50	×24,665.72	-	-	100,127.11	×92,468.10
-	×3,759.57	×3,124.71	×55,097.15	-	×500.00	20,272.87	25,283.58
×228.00	×3,461.90	×2,969.15	×16,447.03	-	-	×47,326.31	×170,015.46
-	×137.77	×936.34	×66,938.44	×43.97	×15,769.78	10,658.66	×21,626.40
×174.33	×7,921.32	×3,874.06	×122,976.70	-	-	15,659.77	×20,252.85
1,548.83	×79,658.40	×56,674.26	×1,389,888.95	×21,516.92	$102,305.58	×344,585.13	×1,820,136.69
1,548.83	×79,658.40	×56,674.26	×1,389,888.95	×26,986.42	$ 22,586.14	746,009.96	$4,724,006.81

a Gas and Electric Company.

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING NEW LEASES, RENEWALS, AND FEE PROPERTY

ACQUIRED FROM JULY 1, 1909 TO DECEMBER 31, 1923

Particulars	New Leases		Renewal Payments	Fee Property		Unaccounted For		Total Acreage Acquired	
	Acres	Amount		Acres	Amount	Acres	Amount	Acres	Amount
OPERATED ACREAGE:									
Six Months Ended December 31-									
1 9 0 9	-	$ -	$ -	-	$ -	-	$ -	-	$ -
Year Ended December 31-									
1 9 1 0	-	-	-	-	-	-	-	-	-
1 9 1 1	-	-	-	-	-	-	-	-	-
1 9 1 2	1,001.00	3,944.88	-	-	-	-	-	1,001.00	3,944.88
1 9 1 3	50.00	183.85	-	-	-	-	-	50.00	183.85
1 9 1 4	13.66	474.60	-	-	-	-	-	13.66	474.60
1 9 1 5	219.67	2,288.33	-	-	-	-	-	219.67	2,288.33
1 9 1 6	18.80	13,396.96	-	6.50	3,500.00	-	-	25.30	16,896.96
1 9 1 7	409.00	9,004.28	-	-	-	-	-	409.00	9,004.28
1 9 1 8	77.20	776.00	-	-	-	-	-	77.20	776.00
1 9 1 9	234.00	7,916.66	-	-	-	-	-	234.00	7,916.66
1 9 2 0	2.00	-	-	.24	1,117.27	-	-	2.24	1,117.27
1 9 2 1	1,477.25	7,621.42	-	1.72	6,589.25	-	-	1,478.97	14,210.67
1 9 2 2	14.90	7,277.43	-	-	-	-	-	14.90	7,277.43
1 9 2 3	-	1,185.24	-	-	-	-	-	-	1,185.24
Total Operated Acreage	3,517.48	$ 54,019.25	$ -	8.46	$ 11,206.52	-	$ -	3,525.94	$ 67,225.77
UNOPERATED ACREAGE:									
Six Months Ended December 31-									
1 9 0 9	-	$ -	$ -	-	$ -	30,817.12	$ 16,218.21	30,817.12	$ 16,218.21
Year Ended December 31-									
1 9 1 0	48,163.18	21,377.20	1,614.29	166.00	1,207.30	21,349.48	12,777.97	109,680.66	36,976.96
1 9 1 1	20,391.28	11,392.58	6,346.29	.35	2,506.78	6,343.74	832.30	26,736.37	21,277.95
1 9 1 2	75,417.96	25,210.77	7,307.08	-	27,430.38	7,046.26	31,049.73	82,464.21	90,997.96
1 9 1 3	141,830.18	23,980.58	16,176.08	6.52	7,819.39	444.98	X1,911.40	142,281.68	48,084.65
1 9 1 4	29,942.12	12,903.11	33,969.70	27.23	5,380.42	654.43	X440.96	30,623.78	52,022.47
1 9 1 5	79,105.33	17,139.76	22,633.84	9.08	13,666.08	6,236.50	18,888.70	85,350.97	69,328.40
1 9 1 6	62,430.62	84,644.46	28,668.14	84.15	42,427.53	13,465.81	39,064.22	75,920.58	164,814.37
1 9 1 7	68,704.01	28,588.82	47,433.16	40.38	18,589.37	2,243.68	6,818.72	67,988.25	101,370.27
1 9 1 8	10,809.02	2,974.83	18,001.33	106.52	1,430.00	1,308.95	13,869.08	12,224.49	36,273.24
1 9 1 9	148,448.99	12,389.72	14,467.47	3.86	4,134.25	3,052.36	3,887.51	151,739.23	34,878.95
1 9 2 0	43,688.22	81,098.14	34,692.98	1,493.81	21,868.67	X1,026.25	2,619.59	46,126.75	110,299.40
1 9 2 1	36,113.78	12,989.45	19,948.69	31.81	17,901.44	446.67	X 2,516.57	36,592.26	47,922.71
1 9 2 2	26,676.44	31,131.49	15,134.39	100.37	44,389.86	X1,074.75	X111.15	27,704.06	90,844.59
1 9 2 3	29,733.02	10,811.49	72,949.98	64.43	22,497.41	2,084.89	3,529.27	31,881.74	110,488.12
Total Unoperated Acreage	932,662.14	$318,842.62	$340,843.41	2,076.70	$231,089.30	93,393.31	$141,971.92	1,028,132.15	$1,031,447.25

(X Denotes red in copy.)

1814

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

SUMMARY OF UNOPERATED LEASES ACQUIRED BY DISTRICTS AND PERIODS

FROM 1910 TO 1923, INCLUSIVE

District	County	1910 to 1914, Inclusive			1915 to 1920, Inclusive			1921 to 1923, Inclusive			T o t a l		
		Acres	Amount	Cost	Acres	Amount	Cost	Acres	Amount	Cost	Acres	Amount	Cost
WEST VIRGINIA:													
Crook	Boone	3,097.00	$ 595.75	$0.13	5,721.00	$ -	$ -	8.00	$ 8.00	$1.00	11,826.00	$ 603.75	$0.05
Peytonia	Boone	872.00	113.50	0.13	-	-	-	1,780.00	-	-	2,653.00	113.50	0.04
Scott	Boone	3,930.68	454.53	0.12	466.00	64.75	0.14	3.00	3.00	1.00	4,399.68	522.28	0.12
Sherman	Boone	1,966.66	268.75	0.13	11,435.05	1,396.30	0.12	-	-	-	13,401.71	1,665.05	0.12
Washington	Boone	7,656.34	1,226.68	0.16	952.00	121.75	0.13	1,168.00	286.56	0.25	9,776.34	1,634.96	0.17
Grant	Cabell	3,908.74	472.42	0.12	8,627.06	2,942.39	0.34	4,996.25	1,327.96	0.27	17,531.05	4,742.75	0.27
Huntington	Cabell	915.25	14.00	0.02	2,260.57	298.00	0.13	174.00	87.00	0.50	3,354.82	399.00	0.12
Union	Cabell	3,421.60	430.72	0.13	7,211.50	439.80	0.07	2,394.80	593.66	0.25	13,017.90	1,463.88	0.11
Barboursville	Cabell	100.00	2.00	0.02	-	-	-	-	-	-	100.00	2.00	0.02
Center	Calhoun	12.00	25.00	2.08	1,356.00	81.76	0.06	1.87	84.17	34.50	1,369.87	140.93	0.10
Lee	Calhoun	9.37	1.00	0.10	-	-	-	-	-	-	9.37	1.00	0.10
Henry	Clay	4,044.00	965.25	0.24	4,497.50	1,531.72	0.34	3,470.75	486.50	0.14	12,002.25	2,983.47	0.25
Otter	Clay	309.00	51.37	0.17	2,973.00	1,413.06	0.47	1,974.00	561.62	0.28	5,252.00	2,026.05	0.40
Union	Clay	1,833.50	116.71	0.06	4,405.30	531.26	0.12	145.50	382.50	2.62	6,384.20	1,002.47	0.16
Buffalo	Clay	75.00	50.00	0.66	210.00	52.50	0.25	-	-	-	285.00	102.50	0.37
Falls	Fayette	960.00	21.25	0.04	9,500.36	2,500.00	0.26	4,000.00	1,000.00	0.25	14,460.36	3,521.25	0.25
Kanawha	Fayette	7,333.00	-	-	-	-	-	-	-	-	7,333.00	-	-
Ravenswood	Jackson	1,935.00	500.83	0.26	2,389.00	2,175.00	0.91	450.00	147.50	0.33	4,774.00	2,823.33	0.60
Ripley	Jackson	15,136.00	1,324.99	0.09	14,320.42	2,714.63	0.19	3,163.00	666.61	0.21	32,639.42	4,706.23	0.14
Washington	Jackson	10,762.17	4,296.58	0.41	9,496.06	11,766.09	1.23	1,222.63	1,156.81	0.95	21,480.86	17,219.48	0.80
Cabin Creek	Kanawha	38,362.72	3,579.80	0.09	28,055.90	24,982.93	0.89	5.00	1,000.00	200.00	66,424.63	29,562.43	0.44
Big Sandy	Kanawha	7,568.94	8,325.63	1.45	1,203.04	6,159.06	5.12	323.18	30,218.29*	93.50	9,115.16	41,702.98*	8.15
Charleston	Kanawha	1,050.54	975.60	0.93	612.75	219.56	0.36	120.00	30.00	0.25	1,764.29	1,225.35	0.70
Elk	Kanawha	17,127.48	10,985.74	0.64	16,677.83	12,480.96	0.75	636.64	1,070.16	1.68	34,443.97	24,544.86	0.71
Jefferson	Kanawha	6,101.00	2,469.77	0.40	4,386.50	3,330.75	0.76	-	-	-	12,487.50	5,800.52	0.46
Loudon	Kanawha	9,283.50	2,270.89	0.24	14,779.50	1,308.68	0.08	131.82	86.81	0.66	24,190.82	3,666.32	0.15
Malden	Kanawha	6,337.31	1,617.87	0.19	122.00	176.00	1.44	122.50	115.75	0.94	6,581.81	1,911.62	0.29
Poca	Kanawha	536.75	111.50	0.21	2,272.09	606.75	0.27	-	-	-	2,808.84	717.25	0.26
Union	Kanawha	4,946.00	2,081.17	0.42	11,997.25	2,370.82	0.20	1,196.00	452.00	0.39	18,191.25	4,913.99	0.27
Washington	Kanawha	725.00	10.00	0.01	-	-	-	-	-	-	725.00	10.00	0.01
Carrel	Lincoln	159.50	3.00	0.02	2,287.00	629.50	0.27	360.25	-	-	2,746.75	632.50	0.23
Duval	Lincoln	3,613.13	660.06	0.18	1,510.81	783.87	0.52	-	-	-	5,123.94	1,443.93	0.28
Hearts Creek	Lincoln	1,988.80	498.52	0.25	380.00	61.80	0.16	-	-	-	2,368.80	559.05	0.24
Laurel Hill	Lincoln	157.00	151.00	0.96	-	-	-	-	-	-	157.00	151.00	0.96
Sheridan	Lincoln	591.50	80.50	0.13	822.00	190.25	0.19	113.00	1,430.00	11.44	1,236.50	1,618.75	0.21
Grant	Jackson	-	-	-	2,148.46	1,691.80	0.77	208.00	226.00	1.10	2,353.46	1,883.80	0.80
Union	Jackson	-	-	-	3,376.00	600.80	0.18	1,333.00	396.00	0.30	4,611.00	796.80	0.17
Washington	Lincoln	-	-	-	887.00	143.00	0.16	84.00	6.00	0.09	921.00	149.00	0.16
Otter	Braxton	-	-	-	11,648.42	28,979.91	2.49	233.00	-	-	12,093.42	28,979.91	2.36

District	County	1910 to 1914, inclusive			1915 to 1920, inclusive			1921 to 1923, inclusive			T o t a l		
		Acres	Amount	Cost	Acres	Amount	Cost	Acres	Amount	Cost	Acres	Amount	Cost
WEST VIRGINIA (Continued):													
Logan	Logan	14,878.40	$ 873.73	$0.06	316.00	$ 60.00	$0.19	-	$ -	$ -	14,894.40	$ 933.73	$0.06
Chapmansville	Logan	14,761.75	814.37	0.06	1,110.80	125.40	0.11	1,493.41	379.28	0.25	17,366.66	1,319.22	0.08
Tridelphia	Logan	3,773.00	15.00	-	-	-	-	-	-	-	3,773.00	15.00	-
Union	Mason	4,768.50	497.30	0.10	4,291.00	439.76	0.10	-	-	-	9,059.50	937.06	0.01
Raymond	Mason	153.00	2.00	-	-	-	-	13,056.50	1,246.90	0.10	13,209.50	1,248.90	0.09
Arbuckle	Mason	1.00	1.00	0.01	7,442.17	6,000.50	0.81	-	-	-	7,443.17	6,001.50	0.80
Harvey	Mingo	3,037.12	32.00	0.01	148.00	20.00	0.14	-	-	-	3,185.12	52.00	0.02
Lee	Mingo	1,969.00	14.00	-	-	-	-	-	-	-	1,969.00	14.00	-
Warfield	Mingo	8,779.70	1,649.58	0.19	1,129.00	128.50	0.11	96.00	1.00	0.01	10,024.70	1,779.08	0.18
Hardee	Mingo	16,070.84	46.81	-	1,323.80	167.50	0.13	-	-	-	17,394.24	216.31	0.01
Morgan	Mongolia	2,024.00	1,824.00	0.76	-	-	-	-	-	-	2,024.00	1,824.00	0.76
Jefferson	Nicholas	551.00	23.48	0.04	-	-	-	-	-	-	551.00	23.48	0.04
Hamilton	Nicholas	237.00	53.00	0.22	-	-	-	178.40	713.60	4.00	415.40	766.60	1.84
Buffalo	Putnam	253.00	1.00	-	1,256.00	310.68	0.24	4,076.83	958.18	0.23	5,588.83	1,269.83	0.23
Curry	Putnam	6,739.25	5,248.84	0.78	3,345.75	970.00	0.29	3,803.25	352.67	0.09	13,891.25	6,571.21	0.47
Poca	Putnam	1,309.50	168.02	0.13	3,372.25	1,008.57	0.30	1,788.75	446.43	0.25	6,467.50	1,620.02	0.25
Teays Valley	Putnam	2,394.46	147.00	0.06	10,312.83	4,107.84	0.40	2,439.86	536.91	0.22	15,151.35	4,791.45	0.32
Union	Putnam	1,884.05	108.13	0.06	224.00	97.75	0.44	-	-	-	2,108.05	202.88	0.10
Curtis	Roane	363.69	4,874.09	13.38	4,069.72	3,971.87	0.97	337.64	613.50	1.82	4,769.05	9,159.46	2.09
Geary	Roane	8,815.04	6,020.37	0.68	2,332.71	10,491.99	4.50	914.50	800.43	0.88	12,062.25	17,313.79	1.43
Harper	Roane	836.23	1,072.15	1.15	2,486.60	2,719.74	1.09	575.00	506.50	0.88	3,897.83	4,298.39	1.07
Smithfield	Roane	1,976.81	8,679.26	4.39	848.97	4,265.97	5.14	369.90	1,167.11	3.16	3,197.68	14,212.34	4.44
Spencer	Roane	6,068.68	8,736.98	0.96	3,333.33	3,782.24	1.17	422.81	132.00	0.31	9,724.82	8,651.22	0.89
Walton	Roane	3,153.72	1,613.34	0.46	529.26	4,696.54	8.88	34.06	562.98	16.53	3,717.04	6,874.83	1.85
Butler	Wayne	1,785.00	126.75	0.07	2.00	-	-	-	-	-	1,787.00	126.75	0.07
Ceredo	Wayne	4,289.93	868.26	0.14	2,508.00	21.00	0.01	-	-	-	6,797.93	889.26	0.09
Union	Wayne	14,343.00	481.80	0.03	748.17	166.37	0.22	-	-	-	15,091.17	617.87	0.04
Lincoln	Wayne	7,813.75	1,479.13	0.19	922.00	64.50	0.07	-	-	-	8,734.75	1,543.63	0.18
Stonewall	Wayne	7,628.82	804.61	0.10	984.00	256.50	0.26	-	-	-	8,612.82	1,060.11	0.12
Spring	Wirt	48.00	1.00	0.02	943.80	238.00	0.25	-	-	-	988.80	239.00	0.24
Scott	Putnam	-	-	-	2,337.80	584.37	0.25	1,442.62	1,323.00	0.92	3,780.12	1,907.37	0.50
Marsh Fork	Raleigh	-	-	-	70,249.06	4,229.62	0.06	1,259.00	270.25	0.21	71,508.06	4,499.87	0.06
Reedy	Roane	-	-	-	2,051.00	512.75	0.25	-	-	-	2,051.00	512.75	0.25
Total West Virginia		307,012.68	$84,238.84	$0.27	330,484.09	$161,435.83	$0.50	62,032.24	$51,773.58*	$0.83	699,498.98	$297,445.23*	$0.43
TOTAL KENTUCKY		107,092.58	10,783.66	0.10	91,937.10	8,239.92	0.06	32,493.00	2,858.87	0.09	231,522.68	18,982.65	0.08
TOTAL OHIO		11,640.50	1,814.74	0.16	-	-	-	-	-	-	11,640.50	1,814.74	0.16
Grand Total		425,745.71	$96,837.44	$0.23	412,391.19	$169,775.75	$0.40	94,525.24	$54,632.43	$0.58	932,662.14	$318,242.62	$0.34

*Includes an extraordinary payment of $38,000.00 for 70 acres in Big Sandy District, Kanawha County.

1816

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

UNDEVELOPED LEASES ACQUIRED BY DISTRICTS

FROM 1910 TO 1914, INCLUSIVE

District	County	1910 Acres	1910 Amount	1911 Acres	1911 Amount	1912 Acres	1912 Amount	1913 Acres	1913 Amount	1914 Acres	1914 Amount	Total Acres	Total Amount
WEST VIRGINIA:													
Creek	Boone	-	$ -	109.00	$ 1.00	660.00	$ 6.00	2,338.00	$ 587.75	-	-	3,097.00	$ 595.75
Peytonia	Boone	-	-	581.00	-	-	-	60.00	43.80	233.00	70.00	873.00	113.80
Scott	Boone	-	-	1,230.00	15.00	839.68	149.28	1,728.00	157.25	133.00	138.00	3,930.68	464.53
Sherman	Boone	-	-	966.66	15.75	828.00	311.00	240.00	42.50	-	-	1,966.66	368.75
Washington	Boone	-	-	3,834.00	36.00	2,323.34	695.25	2,441.00	447.40	60.00	60.00	7,658.34	1,228.65
Grant	Cabell	609.00	49.60	1,211.42	10.00	163.00	2.00	1,076.38	237.79	244.00	167.03	3,908.74	472.42
Huntington	Cabell	-	-	325.00	6.00	590.25	8.00	-	-	-	-	915.25	14.00
Union	Cabell	1,311.00	131.10	-	-	-	-	1,701.80	224.82	419.00	76.80	3,431.80	430.72
Barboursville	Cabell	25.00	1.00	75.00	1.00	-	-	-	-	-	-	100.00	2.00
Center	Calhoun	-	-	12.00	25.00	-	-	-	-	-	-	12.00	25.00
Lee	Calhoun	-	-	9.37	1.00	-	-	-	-	-	-	9.37	1.00
Henry	Clay	580.00	2.00	2,930.00	790.50	117.00	22.75	604.00	150.00	3.00	-	4,044.00	965.25
Otter	Clay	80.00	1.00	215.00	50.37	-	-	-	-	-	-	305.00	51.37
Union	Clay	704.00	58.50	58.50	14.62	1,069.00	23.00	-	-	2.00	22.89	1,833.50	118.71
Buffalo	Clay	-	-	75.00	50.00	-	-	-	-	-	-	75.00	50.00
Falls	Fayette	560.00	21.25	-	-	-	-	-	-	-	-	560.00	21.25
Kanawha	Fayette	-	-	7,333.00	-	-	-	-	-	-	-	7,333.00	-
Riverside	Jackson	646.00	174.00	-	-	-	-	1,389.00	326.75	-	-	1,938.00	500.83
Ripley	Jackson	1,309.00	299.98	382.00	34.26	2,580.00	307.70	10,430.50	539.80	254.50	53.25	15,136.00	1,324.99
Washington	Jackson	1,561.83	378.06	1,074.50	1,317.34	2,018.75	70.25	4,904.00	793.70	1,133.09	1,831.21	10,762.17	4,390.56
Cabin Creek	Kanawha	6,853.73	1,912.00	15,896.50	312.50	14,232.00	1,330.00	3.00	5.00	-	-	38,363.73	3,579.50
Big Sandy	Kanawha	1,037.53	636.00	752.88	873.25	1,454.13	595.39	237.06	2,252.58	107.34	968.44	3,588.94	5,325.65
Charleston	Kanawha	411.33	804.30	-	-	107.21	373.75	224.00	224.75	228.00	173.00	1,080.54	975.80
Elk	Kanawha	4,914.38	2,845.44	1,422.75	1,455.75	867.75	1,640.69	3,542.56	3,938.48	6,400.10	1,115.38	17,127.44	10,993.74
Jefferson	Kanawha	411.00	14.25	-	-	5,946.00	991.00	1,733.00	1,459.52	11.00	5.00	8,101.00	2,469.77
Loudon	Kanawha	8,050.25	1,770.75	1,383.25	692.14	-	-	-	-	-	-	9,283.50	2,270.89
Malden	Kanawha	6,006.21	1,615.87	1,439.00	2.00	-	-	-	-	-	-	8,337.31	1,617.87
Poca	Kanawha	367.00	15.88	369.75	95.62	-	-	-	-	-	-	536.75	111.50
Union	Kanawha	104.00	26.00	-	-	3,501.00	1,018.51	1,391.00	1,046.66	-	-	4,996.00	2,091.17
Washington	Kanawha	725.00	10.00	-	-	-	-	-	-	-	-	725.00	10.00
Carroll	Lincoln	-	-	159.50	3.00	-	-	-	-	-	-	159.50	3.00
Duval	Lincoln	-	-	80.00	4.00	-	-	3,433.13	406.06	100.00	250.00	3,613.13	660.06
Hearts Creek	Lincoln	-	-	80.00	1.00	-	-	781.00	472.05	1,104.50	22.50	1,965.50	495.55
Laurel Hill	Lincoln	157.00	151.00	-	-	-	-	-	-	-	-	157.00	151.00
Sheridan	Lincoln	496.50	88.50	95.00	2.00	-	-	-	-	-	-	591.50	88.50
Logan	Logan	-	-	9,891.40	13.00	X 304.00	612.00	4,977.00	228.73	64.00	20.00	14,576.40	873.73
Chapmansville	Logan	-	-	1,348.00	123.47	X 40.50	173.50	11,634.00	284.04	1,830.25	33.76	14,761.75	814.75
Triadelphia	Logan	-	-	3,773.00	15.00	-	-	-	-	-	-	3,773.00	15.00
Union	Mason	941.00	45.80	-	-	-	-	3,837.50	451.50	-	-	4,778.50	497.30
Raymond	Mason	153.00	2.00	-	-	-	-	-	-	-	-	153.00	2.00
Arbuckle	Mason	-	-	1.00	1.00	-	-	-	-	-	-	1.00	1.00
Barry	Mingo	-	-	90.00	1.00	1,697.00	-	1,252.12	31.00	-	-	3,037.12	32.00
Lee	Mingo	-	-	1,979.00	14.00	-	-	-	-	-	-	1,979.00	14.00
Warfield	Mingo	632.00	37.75	87.00	22.00	750.00	10.00	7,252.70	1,573.50	50.00	6.50	8,799.70	1,649.55
Marion	Mingo	-	-	93.00	2.00	7,703.84	21.00	8,892.00	25.81	-	-	16,678.84	48.81
Morgan	Monongalia	80.00	1,500.00	-	-	-	-	1,944.00	24.00	-	-	2,024.00	1,524.00
Jefferson	Nicholas	491.00	2.00	80.80	21.48	-	-	-	-	-	-	561.00	23.48
Boulter	Nicholas	186.00	50.00	71.00	3.00	-	-	-	-	-	-	257.00	53.00

(X Denotes red in copy.)

District	County	1910 Acres	1910 Amount	1911 Acres	1911 Amount	1912 Acres	1912 Amount	1913 Acres	1913 Amount	1914 Acres	1914 Amount	total Acres	total Amount
WEST VIRGINIA (Continued):													
Buffalo	Putnam	253.00	$ 1.00	-	$ -	-	$ -	-	$ -	-	$ -	253.00	$ 1.00
Curry	Putnam	.50	28.00	-	-	1,791.00	1,055.45	2,279.50	2,492.16	2,663.28	1,677.13	6,739.28	5,248.54
Poca	Putnam	1,180.50	88.25	-	-	-	-	129.00	79.77	-	-	1,309.50	168.02
Teays Valley	Putnam	1,114.78	125.00	1,283.91	22.00	-	-	-	-	-	-	2,398.66	147.00
Union	Putnam	1,834.85	105.13	-	-	-	-	-	-	-	-	1,834.85	105.13
Curtis	Roane	140.00	1,892.75	333.58	745.50	23.56	525.00	X149.45	951.00	16.00	549.84	662.59	4,574.09
Geary	Roane	4,833.41	2,462.34	1,863.01	972.30	1,338.40	1,498.25	174.70	286.19	606.52	841.29	8,815.04	6,020.37
Harper	Roane	475.65	736.25	-	-	113.00	101.00	299.53	205.65	48.25	39.25	936.43	1,072.15
Smithfield	Roane	1,093.95	986.83	341.25	613.50	307.75	5,786.33	69.82	547.00	166.96	746.81	1,979.81	8,679.26
Spencer	Roane	2,176.30	1,088.91	2,015.59	885.20	646.47	1,890.83	660.33	91.50	570.09	1,986.54	6,068.60	5,736.98
Walton	Roane	1,160.00	369.57	684.13	477.77	478.25	181.00	899.35	340.00	107.09	305.00	3,193.72	1,613.34
Butler	Wayne	957.00	116.75	828.00	10.00	-	-	-	-	-	-	1,785.00	126.75
Ceredo	Wayne	-	-	1,341.00	19.00	-	-	2,577.73	492.61	371.20	73.65	4,289.93	585.26
Union	Wayne	20.00	7.50	14,323.00	444.00	-	-	-	-	-	-	14,343.00	451.50
Lincoln	Wayne	373.00	4.00	26.00	2.00	1,317.00	153.56	5,122.75	1,133.12	1,074.00	186.50	7,812.75	1,479.12
Stonewall	Wayne	-	-	1,138.00	109.95	831.32	65.00	5,204.50	579.66	465.00	50.00	7,638.82	804.61
Spring	Wirt	45.00	1.00	-	-	-	-	-	-	-	-	45.00	1.00
Total West Virginia		97,384.31	$19,890.20	82,358.95	$10,340.77	53,434.20	$19,387.23	95,364.06	$23,172.17	18,491.12	$11,465.47	307,012.63	$84,235.84
TOTAL KENTUCKY		29,364.37	1,386.37	6,747.33	932.06	13,291.75	4,430.68	46,226.13	2,704.41	11,461.00	1,437.84	107,092.58	10,783.86
TOTAL OHIO		1,444.80	190.13	1,286.00	139.75	8,672.00	1,402.86	236.00	74.00	-	-	11,640.80	1,814.74
Grand Total		88,183.18	$21,377.20	90,392.28	$11,382.98	75,417.95	$25,210.77	141,830.18	$25,950.58	29,952.12	$13,903.31	425,745.71	$96,834.44

(X Denotes red in copy.)

1818

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

UNOPERATED LEASES ACQUIRED BY DISTRICTS

FROM 1915 TO 1920, INCLUSIVE

District	County	1915 Acres	1915 Amount	1916 Acres	1916 Amount	1917 Acres	1917 Amount	1918 Acres	1918 Amount
WEST VIRGINIA:									
Crook	Boone	-	$ -	-	$ -	-	$ -	-	$ -
Peytonia	Boone	-	-	-	-	-	-	-	-
Scott	Boone	-	-	-	-	-	-	466.00	64.75
Sherman	Boone	1,027.00	1,368.80	40.00	10.00	-	-	366.00	17.50
Washington	Boone	-	-	310.50	118.75	612.50	2.00	30.00	1.00
Grant	Cabell	110.00	104.15	1,509.00	694.89	6,910.06	3,117.60	38.00	11.25
Huntington	Cabell	-	-	-	-	462.00	106.00	-	-
Union	Cabell	-	-	3,173.00	238.00	3,681.00	153.10	357.50	51.40
Barboursville	Cabell	-	-	-	-	-	-	-	-
Center	Calhoun	-	-	-	-	-	-	-	-
Lee	Calhoun	-	-	-	-	-	-	-	-
Henry	Clay	2,363.50	719.50	455.00	244.00	300.00	64.00	189.00	56.50
Otter	Clay	-	-	-	-	2,857.25	1,238.31	-	-
Union	Clay	4,110.00	-	8.80	-	37.50	20.00	6.50	3.00
Buffalo	Clay	-	-	-	-	-	-	-	-
Falls	Fayette	-	-	-	-	700.36	2,500.00	2,800.00	-
Grant	Jackson	-	-	-	-	-	-	-	-
Ravenswood	Jackson	-	-	-	-	-	-	-	-
Ripley	Jackson	8,301.36	1,581.73	1,031.50	242.65	1,121.00	256.50	472.00	95.00
Washington	Jackson	2,127.24	700.55	5,831.30	1,206.57	657.12	1,881.50	79.06	171.15
Cabin Creek	Kanawha	19,774.28	61.00	1,388.92	24,022.43	1,933.21	61.00	17.00	152.00
Big Sandy	Kanawha	909.89	236.33	164.50	4,991.36	58.14	330.00	58.25	326.37
Charleston	Kanawha	110.00	55.00	-	-	145.50	65.50	70.00	36.50
Elk	Kanawha	4,709.00	1,784.18	5,968.19	5,080.83	385.11	106.50	2,849.00	635.00
Jefferson	Kanawha	1,331.50	348.25	2,621.00	2,749.50	347.00	225.25	-	-
Loudon	Kanawha	-	-	-	-	477.50	164.87	489.00	185.75
Malden	Kanawha	-	-	-	-	122.00	178.00	-	-
Poca	Kanawha	-	-	-	-	65.34	43.25	143.75	36.75
Union	Kanawha	627.00	173.50	3,867.00	1,548.52	-	-	-	-
Washington	Kanawha	-	-	-	-	-	-	-	-
Carrol	Lincoln	-	-	-	-	2,065.00	572.00	222.00	55.50
Duval	Lincoln	1,510.81	783.87	-	-	-	-	-	-
Hearts Creek	Lincoln	300.00	61.50	50.00	-	-	-	-	-
Laurel Hill	Lincoln	-	-	-	-	-	-	-	-
Sheridan	Lincoln	-	-	-	-	125.00	-	125.00	31.75
Grant	Jackson	1,700.00	1,191.00	118.46	154.50	-	-	-	-
Union	Jackson	-	-	-	-	-	-	-	-
Washington	Lincoln	-	-	-	-	328.00	82.00	-	-
Otter	Braxton	-	-	-	-	-	-	-	-
Logan	Logan	316.00	60.00	-	-	-	-	-	-
Chapmansville	Logan	842.50	122.40	-	-	260.00	3.00	8.00	-
Tridelphia	Logan	-	-	-	-	-	-	-	-
Union	Mason	1,980.50	411.76	2,300.50	28.00	-	-	-	-
Arbuckle	Mason	-	-	-	-	4,653.67	5,480.75	124.50	4.00
Harvey	Mingo	148.00	20.00	-	-	-	-	-	-
Lee	Mingo	-	-	-	-	-	-	-	-
Garfield	Mingo	30.00	17.50	6.00	100.00	70.00	11.00	-	-
Hardee	Mingo	17.80	-	46.00	160.00	30.00	7.50	-	-

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

UNOPERATED LEASES ACQUIRED BY DISTRICTS

FROM 1915 TO 1920, INCLUSIVE

	1916		1917		1918		1919		1920		Total	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
	-	$ -	-	$ -	-	$ -	8,721.00	$ -	-	$ -	8,721.00	$ -
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	466.00	64.75	-	-	-	-	466.00	64.75
	40.00	10.00	-	-	366.00	17.50	10,002.05	-	-	-	11,438.05	1,396.30
	310.50	118.75	612.50	2.00	30.00	1.00	-	-	-	-	953.00	121.75
	1,509.00	694.39	6,910.06	2,117.60	38.00	11.28	-	-	60.00	15.00	8,637.06	2,942.39
	-	-	462.00	106.00	-	-	-	-	1,803.87	192.00	2,265.87	298.00
	3,173.00	238.00	3,681.00	153.10	357.50	51.40	-	-	-	-	7,211.50	439.50
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	1,366.00	61.78	1,366.00	61.78
	-	-	-	-	-	-	-	-	-	-	-	-
	455.00	244.00	300.00	64.00	189.00	56.50	693.00	190.97	487.00	256.75	4,487.50	1,831.72
	-	-	2,857.25	1,238.31	-	-	50.00	50.00	65.75	134.75	2,973.00	1,413.06
	8.80	-	37.50	20.00	6.50	3.00	40.00	-	202.40	508.26	4,408.20	531.26
	-	-	-	-	-	-	210.00	52.50	-	-	210.00	52.50
	-	-	700.36	2,500.00	2,800.00	-	6,000.00	-	-	-	9,500.36	2,500.00
	-	-	-	-	-	-	-	-	-	186.00	-	186.00
	-	-	-	-	-	-	1,695.00	625.75	694.00	1,549.25	2,389.00	2,175.00
	1,031.50	242.65	1,121.00	256.50	472.00	95.00	2,601.57	380.05	993.00	158.70	14,520.42	2,714.63
	5,831.30	1,206.57	657.12	1,681.50	79.00	171.12	710.81	2,255.35	90.53	5,552.00	9,496.06	11,766.09
	1,388.92	24,022.43	1,933.21	61.00	17.00	152.00	-	-	4,942.52	486.50	28,255.90	24,982.93
	164.50	4,991.36	56.14	330.00	58.25	326.37	6.26	100.00	6.00	175.00	1,203.04	6,159.06
	-	-	145.50	55.50	70.00	36.00	288.25	72.05	-	1.00	613.75	219.55
	5,966.19	5,080.83	385.11	106.50	2,849.00	635.00	1.81	38.50	3,966.72	4,836.25	16,677.83	12,480.96
	2,621.00	2,749.50	347.00	225.25	-	-	87.00	7.75	-	-	4,386.50	3,330.75
	-	-	477.50	164.87	489.00	185.75	13,616.00	673.00	193.00	185.00	14,775.50	1,208.62
	-	-	122.00	178.00	-	-	-	-	-	-	122.00	178.00
	-	-	63.34	43.25	143.75	36.75	2,065.00	525.75	-	-	2,272.09	605.75
	3,867.00	1,548.52	-	-	-	-	7,533.25	543.80	270.00	105.00	11,997.25	2,370.62
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	2,065.00	672.00	222.00	55.50	-	-	-	-	2,287.00	727.50
	-	-	-	-	-	-	-	-	-	-	1,510.81	783.87
	50.00	-	-	-	-	-	-	-	-	-	380.00	61.50
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	125.00	-	125.00	31.75	272.00	68.50	-	-	822.00	100.25
	118.46	154.50	-	-	-	-	-	-	330.00	156.00	2,148.46	1,501.50
	-	-	-	-	-	-	96.00	24.00	3,182.00	376.50	3,278.00	400.50
	-	-	328.00	82.00	-	-	483.00	60.00	36.00	1.00	857.00	143.00
	-	-	-	-	-	-	-	-	11,862.42	28,579.91	11,862.42	28,579.91
	-	-	-	-	-	-	-	-	-	-	316.00	60.00
	-	-	280.00	3.00	8.00	-	-	-	-	-	1,110.50	125.40
	-	-	-	-	-	-	-	-	-	-	-	-
	2,300.50	28.00	-	-	-	-	-	-	-	-	4,291.00	439.76
	-	-	4,653.67	5,480.75	124.50	4.00	1,965.00	349.95	699.00	165.80	7,442.17	6,000.50
	-	-	-	-	-	-	-	-	-	-	148.00	20.00
	-	-	-	-	-	-	-	-	-	-	-	-
	6.00	100.00	70.00	11.00	-	-	1,023.00	-	-	-	1,129.00	128.50
	46.00	160.00	30.00	7.50	-	-	1,230.00	-	-	-	1,323.50	167.50

District	County	1916 Acres	1916 Amount	1916 Acres	1916 Amount	1917 Acres	1917 Amount	1918 Acres	1918 Amount	A
WEST VIRGINIA (Continued):										
Buffalo	Putnam	-	$ -	-	$ -	562.00	$ 137.15	-	$ -	$
Curry	Putnam	1,906.50	510.50	337.00	107.50	785.25	271.75	8.00	2.00	
Poca	Putnam	-	-	764.25	803.57	-	-	-	-	
Teays Valley	Putnam	-	-	-	-	8,676.00	3,667.70	166.00	27.75	2,
Union	Putnam	-	-	-	-	-	-	-	-	
Curtis	Roane	337.00	370.00	6,362.02	1,843.87	64.20	1,460.00	101.50	75.00	
Geary	Roane	772.88	766.24	597.96	5,776.42	160.50	469.25	65.50	690.00	
Harper	Roane	910.75	1,467.00	121.81	877.88	552.13	376.36	-	-	
Smithfield	Roane	341.74	121.06	134.56	287.50	362.94	3,377.39	2.66	3.07	
Spencer	Roane	761.38	828.06	2,015.50	976.82	186.79	1,834.45	14.63	25.00	
Walton	Roane	241.57	1,304.76	180.00	1,380.01	5.19	750.00	-	-	
Butler	Wayne	-	-	-	-	2.00	-	-	-	
Ceredo	Wayne	2,218.00	21.00	290.00	-	-	-	-	-	
Union	Wayne	-	-	-	-	-	-	748.17	166.37	
Lincoln	Wayne	305.00	8.00	617.00	56.50	-	-	-	-	
Stonewall	Wayne	-	2.00	984.00	253.50	-	-	-	-	
Spring	Wirt	-	-	-	-	-	-	-	-	
Scott	Putnam	-	-	-	-	329.50	82.37	-	-	
Marsh Fork	Raleigh	-	-	-	-	-	-	-	-	
Reedy	Roane	-	-	675.00	168.75	355.00	88.75	-	-	1
Total West Virginia		60,149.83	$15,196.63	38,668.77	$33,817.82	40,439.76	$27,894.78	9,717.02	$2,921.83	13
TOTAL KENTUCKY		18,955.50	1,943.13	23,761.85	826.94	25,264.25	634.04	1,092.00	53.00	1
TOTAL OHIO		-	-	-	-	-	-	-	-	
Grand Total		79,105.33	$17,139.76	62,430.62	$34,644.46	65,704.01	$28,528.82	10,809.02	$2,974.83	14

	1916		1917		1918		1919		1920		Total	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
	-	$ -	562.00	$ 137.15	-	$ -	$ 167.00	$ 41.75	527.00	$ 131.75	1,256.00	$ 310.65
80	337.00	107.50	785.25	271.75	8.00	2.00	245.00	61.25	68.00	17.00	3,348.75	970.00
	764.25	803.57	-	-	-	-	2,600.00	202.00	-	-	3,372.25	1,005.57
	-	-	8,676.00	3,667.70	166.00	27.75	186.00	71.50	1,284.83	320.59	10,312.83	4,107.54
	-	-	-	-	-	-	23.00	5.75	201.00	92.00	224.00	97.75
00	8,362.03	1,843.87	64.20	1,460.00	101.50	76.00	76.00	50.00	127.00	173.00	4,067.72	3,971.87
24	607.96	5,776.42	160.50	469.25	65.50	690.00	76.11	497.73	659.76	2,293.35	2,332.71	10,492.99
00	121.81	677.88	352.13	376.36	-	-	867.00	268.50	34.91	30.00	2,486.60	2,719.74
00	134.56	287.50	362.94	3,377.39	2.66	3.07	3.35	46.60	3.72	530.36	848.97	4,365.97
00	2,015.50	976.82	186.79	1,534.45	14.63	25.00	69.58	76.00	185.48	346.93	3,233.33	3,782.24
00	180.00	1,380.01	3.19	750.00	-	-	32.00	43.81	72.50	1,219.96	529.26	4,698.54
	-	-	2.00	-	-	-	-	-	-	-	2.00	-
00	290.00	-	-	-	-	-	-	-	-	-	2,508.00	21.00
	-	-	-	-	748.17	166.37	-	-	-	-	748.17	166.37
00	617.00	56.50	-	-	-	-	-	-	-	-	922.00	64.50
00	984.00	253.50	-	-	-	-	-	-	-	-	984.00	253.50
	-	-	-	-	-	-	943.50	238.00	-	-	943.50	238.00
	-	-	329.50	82.37	-	-	-	-	2,008.00	502.00	2,337.50	584.37
	-	-	-	-	-	-	66,108.45	3,038.85	4,140.61	1,190.77	70,249.06	4,229.62
	675.00	168.75	355.00	88.75	-	-	1,021.00	255.25	-	-	2,051.00	512.75
83	38,668.77	$53,817.52	40,439.76	$27,894.78	9,717.02	$2,941.83	151,825.99	$10,914.91	39,652.73	$30,690.16	320,454.09	$161,435.83
13	23,761.85	826.94	25,264.25	634.04	1,092.00	55.00	16,857.00	1,474.81	6,006.50	408.00	91,937.10	5,339.92
	-	-	-	-	-	-	-	-	-	-	-	-
76	62,430.62	$54,644.46	65,704.01	$28,528.82	10,809.02	$2,974.83	168,682.99	$12,389.72	45,659.23	$31,098.16	412,391.19	$166,775.75

1820

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

UNOPERATED LEASES ACQUIRED BY DISTRICTS

FOR THE YEARS ENDED DECEMBER 31, 1921, 1922 AND 1923

District	County	1921 Acres	1921 Amount	1922 Acres	1922 Amount	1923 Acres	1923 Amount	Total Acres	Total Amount
WEST VIRGINIA:									
Creek	Boone	1.00	$ 1.00	-	$ -	7.00	$ 7.00	8.00	$ 8.00
Peytonia	Boone	1,780.00	-	-	-	-	-	1,780.00	-
Scott	Boone	-	-	3.00	3.00	-	-	3.00	3.00
Sherman	Boone	-	-	-	-	-	-	-	-
Washington	Boone	276.50	69.12	781.50	188.19	137.00	34.25	1,195.00	288.56
Grant	Cabell	4,850.78	1,137.19	16.00	1.00	428.50	189.75	4,995.28	1,327.94
Huntington	Cabell	174.00	87.00	-	-	-	-	174.00	87.00
Union	Cabell	2,374.80	593.68	-	-	-	-	2,374.80	593.68
Barboursville	Cabell	-	-	-	-	-	-	-	-
Center	Calhoun	1.87	84.17	-	-	-	-	1.87	84.17
Beary	Clay	-	-	2,813.78	56.50	987.00	428.00	3,470.78	486.50
Otter	Clay	-	-	1,086.50	13.50	887.50	548.12	1,974.00	561.62
Union	Clay	-	-	142.50	52.50	3.00	300.00	145.50	352.50
Falls	Fayette	-	-	4,000.00	1,000.00	-	-	4,000.00	1,000.00
Ravenswood	Jackson	380.00	128.50	100.00	28.00	-	-	480.00	147.50
Ripley	Jackson	853.00	138.25	1,636.00	264.50	994.00	268.86	3,183.00	666.61
Washington	Jackson	216.00	661.80	39.00	80.00	967.63	445.31	1,222.63	1,186.81
Cabin Creek	Kanawha	8.00	1,000.00	-	-	-	-	8.00	1,000.00
Big Sandy	Kanawha	12.00	2,500.00	88.68	28,078.00	222.50	2,642.29	323.18	30,818.29
Charleston	Kanawha	-	-	-	-	120.00	30.00	120.00	30.00
Elk	Kanawha	3.66	3.66	861.00	610.28	74.00	456.28	638.66	1,070.16
Loudon	Kanawha	-	-	131.68	84.81	-	1.00	131.68	85.81	
Malden	Kanawha	122.50	118.75	-	-	-	-	122.50	118.75
Union	Kanawha	-	109.00	97.00	97.00	1,141.00	286.00	1,198.00	492.00
Carrol	Lincoln	-	-	14.28	-	286.00	-	300.28	-
Sheridan	Lincoln	-	-	48.00	1.00	100.00	1,429.00	128.00	1,430.00
Grant	Jackson	208.00	226.00	-	-	-	-	208.00	226.00
Union	Jackson	290.00	80.00	1,043.00	315.00	-	-	1,333.00	395.00
Washington	Lincoln	-	-	-	-	84.00	8.00	84.00	8.00
Otter	Braxton	-	-	17.28	-	218.78	-	235.00	-
Chapmansville	Logan	-	-	-	-	1,493.41	379.25	1,493.41	379.25
Sherrard	Mason	13,023.50	1,236.90	53.00	10.00	-	-	13,056.50	1,246.90
Barfield	Hugo	-	-	96.00	1.00	-	-	96.00	1.00
Hamilton	Nicholas	178.40	715.60	-	-	-	-	178.40	715.60
Buffalo	Putnam	4,076.83	958.18	-	-	-	-	4,076.83	958.18
Curry	Putnam	88.00	22.88	569.00	143.28	3,146.25	186.54	3,803.25	352.67
Poca	Putnam	-	-	79.50	19.87	1,708.28	426.56	1,788.75	446.43
Teays Valley	Putnam	1,636.86	336.41	803.00	200.50	-	-	2,439.86	536.91
Curtis	Roane	131.50	92.50	150.14	107.50	56.00	413.50	337.64	613.50
Beary	Roane	14.00	-	77.75	104.00	824.75	696.43	914.50	800.43
Harper	Roane	142.00	126.00	-	-	433.00	380.50	575.00	506.50
Smithfield	Roane	45.42	254.48	1.00	373.00	343.48	537.63	389.90	1,167.11
Spencer	Roane	1.81	5.00	100.00	50.00	321.00	77.00	422.81	132.00
Walton	Roane	34.06	562.98	-	-	-	-	34.06	562.98
Scott	Putnam	1,448.82	1,323.00	-	-	-	-	1,448.82	1,323.00
Marsh Fork	Raleigh	1,004.00	206.50	-	-	288.00	63.78	1,289.00	270.28
Total West Virginia		32,712.78	$12,734.20	14,138.44	$28,808.37	18,184.08	$10,230.99	65,035.24	$51,773.56
TOTAL KENTUCKY		3,401.00	285.28	14,543.00	2,325.12	14,549.00	280.50	32,493.00	2,858.87
TOTAL OHIO		-	-	-	-	-	-	-	-
Grand Total		36,113.78	$13,989.48	28,678.44	$31,131.49	29,733.08	$10,511.49	94,525.24	$54,632.43

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF

SUBSEQUENT RENEWALS IN THE CASE OF SPECIFIC LEASES

BIG SANDY DISTRICT, KANAWHA COUNTY

	Original Valuation		Renewals 1910-1921 Inclusive			Renewals 1922-1924 Inclusive		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
19389	225.00	$ 5,625.00	1913	225.00	$ 56.25	Apr. 1922	225.00	$ 225.00
19331	30.00	750.00	1913	30.00	37.50	Apr. 1922	30.00	150.00
19431	35.00	350.00	1913	35.00	35.00	May 1922	35.00	160.00
19606	18.00	750.00	Aug. 1913	15.00	93.50	Aug. 1922	15.00	691.66
19697	3.00	150.00	Mar. 1915	3.00	56.75	Sept. 1922	3.00	50.00
19606	6.25	300.00	June 1914	6.25	37.50	Oct. 1922	6.25	37.50
19614	3.00	150.00	June 1914	3.00	18.75	Oct. 1922	3.00	18.75
19620	141.00	1,410.00	1913	141.00	40.00	Oct. 1922	141.00	200.00
19643	326.00	3,275.00	Oct. 1913	326.00	25.00	Nov. 1922	326.00	1,050.00
19627	25.00	250.00	Aug. 1915	25.00	37.50	Jan. 1923	25.00	1.00
12379	32.50	1,625.00	June 1914	32.50	37.50	Feb. 1923	32.50	150.00
19740	43.00	2,225.00	-	-	-	Feb. 1923	43.00	300.00
19744	108.00	2,700.00	Feb. 1914	108.00	75.00	Feb. 1923	108.00	600.00
19748	11.50	57.50	Aug. 1915	11.50	25.00	Feb. 1923	11.50	200.00
12524	12.00	300.00	Aug. 1914	12.00	75.00	Feb. 1923	12.00	200.00
12318	32.50	1,625.00	Aug. 1914	32.50	37.50	Feb. 1923	32.50	175.00
12031-2	96.00	1,951.00	Apr. 1914	96.00	150.00	Feb. 1923	96.00	600.00
12285	51.00	2,550.00	May 1914	51.00	75.00	Feb. 1923	51.00	100.00
19762	83.00	4,150.00	Apr. 1914	83.00	37.50	Mar. 1923	83.00	500.00
19764	6.20	1,640.00	May 1914	6.20	37.50	Mar. 1923	6.20	1.00
19767	24.60	-	May 1914	24.60		Mar. 1923	24.60	300.00
12247	45.00	2,250.00	May 1914	45.00	75.00	Mar. 1923	45.00	300.00
12256	65.00	3,250.00	May 1914	65.00	75.00	Mar. 1923	65.00	300.00
12276	126.00	6,300.00	May 1914	126.00	75.00	Mar. 1923	126.00	300.00
11984	51.00	2,550.00	May 1914	51.00	75.00	Mar. 1923	51.00	300.00
12178	80.00	800.00	May 1914	80.00	75.00	Mar. 1923	80.00	300.00
12275	40.00	2,000.00	May 1914	40.00	75.00	Mar. 1923	40.00	300.00
12415	41.00	1,025.00	July 1914	41.00	75.00	Mar. 1923	41.00	300.00
11980	13.00	325.00	June 1914	13.00	62.50	Mar. 1923	13.00	150.00
11969	55.00	1,375.00	Mar. 1914	55.00	75.00	Mar. 1923	55.00	150.00
17765	25.00	625.00	1913	25.00	75.00	Mar. 1923	25.00	100.00
12515	58.00	2,900.00	Aug. 1914	58.00	75.00	Mar. 1923	58.00	200.00
11986	75.00	3,750.00	1913	75.00	200.00	Mar. 1923	75.00	400.00
12542	65.00	3,250.00	Sept. 1914	65.00	75.00	Mar. 1923	65.00	300.00
17775	220.00	1,375.00	Mar. 1914	220.00	75.00	Apr. 1923	220.00	400.00
19780	368.00	18,174.40	Mar. 1914	368.00	75.00	Apr. 1923	368.00	600.00
19782	188.00	9,400.00	1914	188.00	56.25	Apr. 1923	188.00	850.00
12277	26.00	1,300.00	May 1914	26.00	75.00	Apr. 1923	26.00	300.00
11861	100.00	1,000.00	Feb. 1914	100.00	75.00	Apr. 1923	100.00	300.00
12238	14.00	70.00	May 1914	14.00	62.50	Apr. 1923	14.00	150.00
19781	42.00	1,050.00	1914	42.00	75.00	Apr. 1923	42.00	350.00
19820	200.00	9,000.00	Feb. 1914	200.00	37.50	May 1923	200.00	650.00
19843	200.00	2,667.00	Mar. 1914	200.00	75.00	May 1923	200.00	250.00
19844		2,142.75	Mar. 1914		56.25	May 1923		300.00
19846	185.00	4,625.00	Mar. 1914	185.00	50.00	May 1923	185.00	350.00
11948	40.00	400.00	Mar. 1914	40.00	75.00	May 1923	40.00	325.00
12279	46.25	700.00	May 1914	46.25	75.00	May 1923	46.25	304.50

1922

	Original Valuation		Removals 1910-1921 Inclusive			Removals 1922-1924 Inclusive		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
12224	81.00	$ 810.00	May 1914	81.00	$ 75.00	May 1923	81.00	$ 275.00
12035	61.00	1,828.00	Mar. 1914	61.00	75.00	June 1923	61.00	400.00
19211	5.00	250.00	1914	5.00	11.90	June 1923	5.00	300.00
12390	100.00	800.00	Sept. 1914	100.00	75.00	June 1923	100.00	400.00
12309	42.50	2,125.00	July 1914	42.50	75.00	June 1923	42.50	400.00
12471	80.00	2,800.00	Aug. 1914	80.00	75.00	June 1923	80.00	400.00
12480	80.00	948.68	May 1914	80.00	75.00	June 1923	80.00	300.00
12286	120.00	1,398.00	May 1914	120.00	75.00	June 1923	120.00	300.00
12287	99.00	915.00	May 1914	99.00	80.00	June 1923	99.00	300.00
12436	30.00	1,500.00	July 1914	30.00	75.00	June 1923	30.00	200.00
12213	68.00	3,400.00	May 1914	68.00	75.00	July 1923	68.00	300.00
12214	93.00	4,650.00	May 1914	93.00	75.00	July 1923	93.00	300.00
12237	37.00	1,850.00	May 1914	37.00	75.00	July 1923	37.00	400.00
11927	50.00	2,500.00	May 1914	50.00	75.00	July 1923	50.00	300.00
11965	100.00	2,500.00	Mar. 1914	100.00	75.00	July 1923	100.00	300.00
12486	68.00	3,350.00	Aug. 1914	68.00	75.00	July 1923	68.00	300.00
12404	10.00	250.00	July 1914	10.00	23.79	July 1923	10.00	1.00
19964	10.00	100.00	Aug. 1914	10.00	80.00	July 1923	10.00	300.00
19973	.37	37.80	June 1914	.37	85.00	July 1923	.37	150.00
19911	5.00	250.00	1914	5.00	11.90	July 1923	5.00	1.00
12239	15.00	375.00	May 1914	15.00	62.50	Aug. 1923	15.00	300.00
12210	14.00	350.00	May 1914	14.00	37.50	Aug. 1923	14.00	300.00
12048	47.00	1,176.00	May 1914	47.00	75.00	Aug. 1923	47.00	300.00
12184	55.00	2,750.00	Apr. 1914	55.00	75.00	Aug. 1923	55.00	400.00
12306	50.00	2,500.00	June 1914	50.00	26.13	Aug. 1923	50.00	300.00
12501	15.00	750.00	Aug. 1914	15.00	75.00	Aug. 1923	15.00	300.00
12327	23.00	115.00	June 1914	23.00	50.00	Oct. 1923	23.00	350.00
12641	28.00	1,400.00	Oct. 1914	28.00	37.50	Oct. 1923	28.00	350.00
11983	11.30	247.50	Mar. 1914	11.30	70.00	Feb. 1924	11.30	75.00
13771	50.00	250.00	Dec. 1915	50.00	75.00	Mar. 1924	50.00	400.00
13772	225.00	8,625.00	Dec. 1915	225.00	106.25	Mar. 1924	225.00	400.00
20264	18.00	480.00	Sept. 1914	18.00	42.19	Apr. 1924	18.00	300.00
10988	34.25	862.50	June 1913	34.25	1.00	Apr. 1924	34.25	225.00
17888	20.00	1,000.00	July 1930	20.00	287.50	Apr. 1924	20.00	150.00
11479	30.00	750.00	Oct. 1913	30.00	30.00	May 1924	30.00	275.00
12907	90.25	4,550.00	Feb. 1915	90.25	75.00	May 1924	90.25	300.00
12686	46.00	2,250.00	Jan. 1915	46.00	75.00	July 1924	46.00	150.00
	5,460.67	$161,837.08		5,417.67	$5,335.79		5,460.67	$24,591.41
Price per Acre		$ 29.67			$ .98			$ 4.50

1923

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENEWALS IN THE CASE OF SPECIFIC LEASES - CURTIS DISTRICT, BOONE COUNTY

Lease No.	Original Valuation Acres	Original Valuation Amount	Renewals 1910 - 1921 Inclusive Date	Acres	Amount	Renewals 1922 - 1926 Inclusive Date	Acres	Amount
19276	318.00	$ 7,878.00	-	-	$ -	March 1922	318.00	$ 1.00
19297	64.00	330.00	-	-	-	March 1922	64.00	1.00
19298	80.00	800.00	-	-	-	March 1922	80.00	1.00
19370	80.00	3,000.00	1913	86.00	86.00	Sept. 1922	86.00	1.00
19371	95.00	2,328.00	1913	95.00	95.00	Sept. 1922	95.00	180.75
19431	1.80	700.00	1914	1.80	180.00	Sept. 1922	95.00	304.00
19427	8.00	486.00	1913	8.00	100.00	Nov. 1922	1.80	300.00
19428	8.00			8.00		Dec. 1922	8.00	1.00
19665	31.00	930.00	1913	33.00	33.00	Dec. 1922	8.00	1.00
19679	128.00	6,400.00	-	-	-	Dec. 1922	33.00	300.00
11916	48.00	2,424.00	Feb. 1914	48.00	1.00	Dec. 1922	128.00	1.00
11918	40.00	2,025.00	Feb. 1914	40.00	1.00	Jan. 1923	48.00	1.00
16388	30.00	750.00	May 1918	30.00	80.00	Jan. 1923	40.00	1.00
19713	77.00	3,850.00	1914	77.00	80.00	Jan. 1923	30.00	180.00
19728	10.00	100.00	-	-	-	Feb. 1923	77.00	100.00
16493	10.00	100.00	Aug. 1918	10.00	1.00	May 1923	10.00	180.00
						Sept. 1923	10.00	1.00
	1,008.00	$31,796.00		436.80	$ 867.00		1,008.00	$ 1,323.75
Price per Acre		X$ 31.54			X$ 1.29			X$ 1.31

(X Denotes red in copy.)

1824

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENEWALS

IN THE CASE OF SPECIFIC LEASES - GRANT DISTRICT, BOONE COUNTY

	Original Valuation		Renewals 1910-1921, Incl.			Renewals 1922-1934, Incl.		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
19697	27.00	$ 270.00	1919	27.00	$ 13.50	Jan. 1923	27.00	$ 168.00
11671	63.00	3,150.00	Dec. 1913	63.00	62.00	Jan. 1923	63.00	300.00
16678	36.00	3,600.00	Mar. 1919	36.00	1.00	Jan. 1923	36.00	200.00
19688	30.00	1,500.00	-	30.00	41.62	Jan. 1923	30.00	150.00
19702	10.00	800.00	-	-	-	Jan. 1923	10.00	300.00
11907	73.00	3,650.00	Feb. 1914	73.00	75.00	Feb. 1923	73.00	100.00
12316	12.00	600.00	June 1914	12.00	25.00	Feb. 1923	12.00	300.00
11976	68.00	3,400.00	Mar. 1914	68.00	75.00	Feb. 1923	68.00	200.00
11909	73.00	3,650.00	Feb. 1914	73.00	75.00	Feb. 1923	73.00	100.00
11978	53.00	2,650.00	Mar. 1914	53.00	75.00	Feb. 1923	53.00	300.00
16842	7.00	350.00	July 1915	7.00	35.75	Feb. 1923	7.00	666.00
16861	3.00	150.00	July 1915	3.00	15.00	Feb. 1923	3.00	666.00
16843	10.00	500.00	July 1915	10.00	35.00	Feb. 1923	10.00	666.00
19724	50.00	2,500.00	1913	50.00	25.00	Feb. 1923	50.00	262.50
19746	19.00	950.00	1913	19.00	67.50	Feb. 1923	19.00	500.00
12027	37.00	370.00	Mar. 1914	37.00	50.00	Mar. 1923	37.00	300.00
12443	28.00	700.00	July 1914	28.00	28.00	Mar. 1923	28.00	350.00
16614	300.00	7,500.00	May 1919	300.00	150.00	Mar. 1923	300.00	500.00
16860	150.00	3,750.00	May 1919	150.00	75.00	Mar. 1923	150.00	300.00
12551	58.00	2,750.00	Sept. 1914	55.00	1.00	Mar. 1923	55.00	300.00
19761	125.00	6,250.00	1913	125.00	37.50	Mar. 1923	125.00	300.00
16367	113.00	114.00	June 1918	113.00	1.00	Mar. 1923	113.00	278.50
11972	151.00	7,550.00	June 1914	151.00	71.50	Mar. 1923	151.00	300.00
11973	14.50	700.00	Mar. 1914	14.50	3.50	Mar. 1923	14.50	400.00
11862	100.00	5,000.00	Feb. 1914	100.00	75.00	Mar. 1923	100.00	300.00
12074	205.00	10,250.00	Mar. 1914	205.00	250.00	Mar. 1923	205.00	400.00
12044	72.00	3,600.00	Apr. 1914	72.00	75.00	Mar. 1923	72.00	600.00
11131	68.00	4,800.00	Aug. 1913	65.00	1.00	Apr. 1923	65.00	350.00
12422	78.00	3,412.50	June 1914	75.00	380.00	May 1923	78.00	206.25
12271	5.00	250.50	May 1914	5.00	37.50	May 1923	5.00	150.00
19673	24.50	1,225.00	Dec. 1914	24.50	18.75	May 1923	24.50	200.00
19686	6.50	325.00	Dec. 1914	6.50	18.75	May 1923	6.50	500.00
12543	37.50	1,875.00	Sept. 1914	37.50	36.50	May 1923	37.50	100.00
17281	7.75	11.81	Nov. 1919	7.75	37.50	May 1923	7.75	100.00
16909	14.00	111.36	July 1913	14.00	1.00	May 1923	14.00	200.00
12214	33.33	1,680.00	May 1914	32.33	62.50	May 1923	33.33	250.00
19645	22.50	1,125.00	Dec. 1919	22.50	150.00	May 1923	22.50	250.00
19656	15.50	395.25	Nov. 1919	15.50	37.50	June 1923	15.50	100.00
19987	125.00	6,250.00	Aug. 1914	125.00	93.75	Aug. 1923	125.00	300.00
13044	57.00	570.00	Mar. 1915	57.00	14.25	Nov. 1923	57.00	303.75
11341	98.00	980.00	Sept. 1913	98.00	98.00	Nov. 1923	98.00	300.00
11988	25.00	1,300.00	Nov. 1913	26.00	26.00	Jan. 1924	26.00	300.00
20173	10.50	525.00	Mar. 1915	10.50	41.75	Jan. 1924	10.50	300.00
20174	9.00	90.00	Mar. 1915	9.00	2.25	Jan. 1924	9.00	262.75
20175	4.00	40.00	Mar. 1915	4.00	1.00	Jan. 1924	4.00	244.00
17304	9.50	393.75	Mar. 1920	9.50	75.00	Jan. 1924	9.50	300.00
11396	35.00	1,750.00	Nov. 1913	35.00	35.00	Jan. 1924	35.00	300.00
13806	17.60	880.28	Nov. 1915	17.60	58.89	Feb. 1924	17.60	300.00
13467	20.00	1,000.00	Aug. 1918	20.00	75.00	Mar. 1924	20.00	300.00

	Original Valuation		Renewals 1910-1921, Incl.			Renewals 1922-1924, Incl.		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
12870	12.50	$ 625.00	Jan. 1915	12.50	$ 37.50	Mar. 1924	12.50	$ 150.00
17698	4.00	40.00	-	-	-	Mar. 1924	4.00	300.00
20250	14.87	931.21	July 1915	14.87	37.50	Apr. 1924	14.87	300.00
13843	12.50	625.00	Jan. 1915	12.50	37.50	June 1924	12.50	150.00
13295	4.00	40.00	Mar. 1915	4.00	4.00	June 1924	4.00	200.00
19233	50.00	2,500.00	Sept. 1912	50.00	62.50	Jan. 1922	50.00	200.00
10637	4.00	200.00	Mar. 1913	4.00	50.00	Mar. 1922	4.00	105.00
19317	122.00	6,100.00	1913	122.00	62.50	Apr. 1922	122.00	100.00
11414	100.00	2,500.00	Oct. 1913	100.00	25.00	Apr. 1922	100.00	100.00
19372	34.00	3,401.18	1913	34.00	13.73	May 1923	34.00	50.00
11130	100.00	5,000.00	Aug. 1913	100.00	50.00	July 1922	100.00	150.00
19823	69.50	3,475.00	Oct. 1914	69.50	125.38	Aug. 1922	69.50	175.00
19596	291.50	14,575.00	June 1913	291.50	49.34	Sept. 1922	291.50	300.00
19694	40.00	1,000.00	-	-	-	Nov. 1923	40.00	300.00
11956	60.00	3,000.00	Mar. 1914	60.00	75.00	Nov. 1922	60.00	100.00
	3,541.75	$148,176.67		3,467.75	$3,457.61		3,541.75	$17,507.75
Price per Acre	× $	41.84		× $	.99		×	4.94

1826

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENEWALS

IN THE CASE OF SPECIFIC LEASES - SALTHFIELD DISTRICT, BOONE COUNTY

Lease No.	Original Valuation		Renewals 1910-1921, Incl.			Renewals 1922-1934, Incl.		
	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
16361	3.00	$ 150.00	-	-	$ -	Nov. 1922	3.00	$ 200.00
16362	20.00	1,000.00	-	-	-	Nov. 1922	20.00	200.00
16363	16.50	825.00	-	-	-	Nov. 1922	16.50	200.00
12296	15.00	750.00	Apr. 1914	18.00	37.50	Dec. 1922	15.00	1.00
12295	5.03	262.50	Apr. 1914	5.03	18.75	Dec. 1922	5.03	1.00
12291	12.50	625.00	Apr. 1914	12.50	37.50	Dec. 1922	12.50	1.00
12352	6.00	312.50	Apr. 1914	6.00	9.38	Dec. 1922	6.00	1.00
19671	97.00	4,850.00	June 1914	97.00	75.00	Jan. 1923	97.00	150.00
19701	12.50	625.00	Mar. 1914	12.50	31.20	Jan. 1923	12.50	30.00
19692	66.00	3,300.00	May 1914	66.00	75.00	Jan. 1923	66.00	3.00
19693	26.50	1,286.72	June 1914	26.50	18.75	Jan. 1923	26.50	2.00
12682	2.50	125.00	Oct. 1914	2.50	1.00	Jan. 1923	2.50	1.00
19700	30.00	1,500.00	Mar. 1914	30.00	56.50	Jan. 1923	30.00	100.00
19726	73.00	3,650.00	Mar. 1914	73.00	44.25	Feb. 1923	73.00	65.00
19735	64.00	3,200.00	June 1919	64.00	250.00	Feb. 1923	64.00	250.00
19734	26.50	1,325.00	Apr. 1914	26.50	37.50	Feb. 1923	26.50	150.00
12240	76.00	4,084.27	May 1914	76.00	43.75	Feb. 1923	76.00	75.00
19710	10.00)	1,000.00	May 1914	10.00)	37.50	Feb. 1923	10.00	25.00
19730	10.00)			10.00)		Feb. 1923	10.00	30.00
12360	19.00	1,020.68	May 1914	19.00	9.38	Feb. 1923	19.00	18.75
19728	2.50	125.00	May 1914	2.50	9.38	Feb. 1923	2.50	25.00
19727	62.22	3,111.12	June 1914	62.22	46.83	Feb. 1923	62.22	413.89
19729	26.50	1,286.73	May 1914	26.50	18.75	Feb. 1923	26.50	25.00
19919	106.00	63.38	May 1914	106.00	6.25	Feb. 1923	106.00	12.50
19947	1.25	300.00	July 1914	1.25	1.00	Feb. 1923	1.25	25.00
19748	28.50	1,531.02	May 1914	28.50	14.06	Feb. 1923	28.50	30.00
19769	10.00)	300.00	May 1914	10.00)	1.00	Mar. 1923	10.00	150.00
19778	1.25)			1.25)		Mar. 1923	1.25	37.50
13467	57.00	1,425.00	July 1914	57.00	57.00	Mar. 1923	57.00	57.00
19800	81.50	4,580.50	Apr. 1914	81.50	75.00	Apr. 1923	81.50	300.00
19801	68.00	3,400.00	Mar. 1914	68.00	1.00	Apr. 1923	68.00	300.00
11167	10.00	500.00	Aug. 1913	10.00	1.00	Apr. 1923	10.00	75.00
11168	1.50	75.00	Aug. 1913	1.50	1.00	Apr. 1923	1.50	75.00
12196	5.02	262.50	May 1914	5.02	25.00	Apr. 1923	5.02	75.00
16397	127.00	3,175.00	-	-	-	Apr. 1923	127.00	100.00
19772	37.33	2,486.89	May 1914	37.33	37.22	May 1923	37.33	111.12
19667	83.00	4,150.00	May 1914	83.00	75.00	May 1923	83.00	1,000.00
12283	280.00	14,500.00	May 1914	280.00	150.00	May 1923	280.00	900.00
19868	68.00	3,400.00	May 1914	68.00	75.00	May 1923	68.00	400.00
19864	229.00	11,450.00	May 1914	229.00	125.00	May 1923	229.00	700.00
12287	2.50	125.00	May 1914	2.50	9.38	May 1923	2.50	37.50
19828	10.00	500.00	May 1914	10.00	37.50	May 1923	10.00	150.00
19826	53.00	2,650.00	Apr. 1914	53.00	75.00	May 1923	53.00	300.00
19825	153.00	7,650.00	Mar. 1914	153.00	84.75	May 1923	153.00	979.25
19827	7.50	375.00	June 1914	7.50	37.50	May 1923	7.50	75.00
19829	33.50)	3,350.00	June 1914	33.50)	150.00	May 1923	33.50	150.00
19830	33.50)			33.50)		May 1923	33.50	150.00
12283	2.50	125.00	May 1914	2.50	9.38	May 1923	2.50	100.00
19899	50.00	937.50	June 1914	50.00	100.00	May 1923	50.00	300.00

	Original Valuation		Renewals 1910-1921, Incl.			Renewals 1922-1924, Incl.		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
10500	365.00	$ 18,250.00	Mar. 1913	365.00	$ 1.00	May 1923	365.00	$ 750.00
12182	20.00	1,000.00	Apr. 1914	20.00	37.50	May 1923	20.00	100.00
12333	80.00	2,500.00	Apr. 1914	80.00	62.50	May 1923	80.00	250.00
12072	13.50	675.00	Mar. 1914	13.50	31.25	May 1923	13.50	200.00
19922	261.00	13,050.00	May 1914	261.00	150.00	June 1923	261.00	1.00
19899	50.00	937.50	June 1914	50.00	100.00	June 1923	50.00	38.00
19915	158.00	7,900.00	Apr. 1914	158.00	150.00	June 1923	158.00	1.00
19963	18.50	672.50	May 1914	15.50	67.50	July 1923	15.50	28.00
19945	7.50	375.00	Mar. 1914	7.50	22.00	Aug. 1923	7.50	100.00
20063	182.00	4,550.00	June 1914	182.00	300.00	Oct. 1923	182.00	109.00
20216	173.00	8,650.00	Aug. 1915	173.00	75.00	Feb. 1924	173.00	75.00
	3,827.60	$160,684.30		3,361.10	$2,954.41		3,827.60	$10,273.63
Price per Acre	X$	42.00		X$	.88		X$	2.91

(X Denotes red in copy.)

1928

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENEWALS

IN THE CASE OF SPECIFIC LEASES - SPENCER DISTRICT, ROANE COUNTY

	Original Valuation		Renewals 1910 - 1921 Inclusive			Renewals 1922 - 1934 Inclusive		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
16492	31.00	$ 310.00	Nov. 1917	31.00	$ 8.75	Sept. 1923	31.00	$ 1.00
18924	4.00	100.00	Aug. 1917	4.00	1.00	Sept. 1923	4.00	1.00
20103	63.00	1,575.00	Feb. 1915	63.00	75.00	Nov. 1923	63.00	1.00
17611	93.75	5,000.00	Apr. 1911	93.75	100.00	Mar. 1926	93.75	1.00
16945	2.00	1.84	Apr -	-	-	Mar. 1934	2.00	1.00
20279	4.00	3.66	-	-	-	Mar. 1934	4.00	100.00
20728	6.00	6.00	Ap -	-	-	Mar. 1934	6.00	100.00
	203.75	$6,996.50		191.75	$176.75		203.75	$205.00
Price per Acre		X$ 34.34			X$ .93			X$ 1.01

1829

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENTALS

IN THE CASE OF SPECIFIC LEASES - WALTON DISTRICT, ROANE COUNTY

	Original Valuation		Renewals 1922 - 1924 Inclusive			Renewals 1922 - 1924 Inclusive		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
19508	40.00	$ 4,000.00	Aug. 1913	40.00	$ 54.68	Aug. 1922	40.00	$ 666.67
19644	176.00	6,300.00	Apr. 1914	176.00	1.00	Nov. 1922	176.00	150.00
12090	57.00	2,850.00	Apr. 1914	57.00	1.00	Jan. 1923	57.00	100.00
12144	40.00	4,000.00	Apr. 1914	40.00	50.00	Jan. 1923	40.00	200.00
12148	40.00	400.00	Apr. 1914	40.00	1.00	Jan. 1923	40.00	1.00
19736	380.00	19,000.00	May 1914	380.00	1.00	Feb. 1923	380.00	1,000.00
19715	76.00	3,800.00	Apr. 1914	76.00	1.00	Feb. 1923	76.00	100.00
12202	19.75	987.50	Apr. 1914	19.75	70.00	Feb. 1923	19.75	300.00
12149	6.75	656.06	Apr. 1914	6.75	1.00	Mar. 1923	6.75	300.00
12369	50.00	2,500.00	June 1914	50.00	75.00	Mar. 1923	50.00	300.00
19776	50.00	2,500.00	Apr. 1914	50.00	62.50	Apr. 1923	50.06	307.62
12228	80.00	4,400.00	May 1914	80.00	53.00	June 1923	86.00	330.00
17200	100.00	5,450.00	May 1914	100.00	100.00	June 1923	100.00	660.66
19914	27.75	1,387.50	Aug. 1913	27.75	50.00	June 1923	27.75	115.06
13311	7.08	350.00	-	-	-	Feb. 1924	7.08	100.00
13670	3.50	350.00	Nov. 1918	3.50	75.00	Feb. 1924	3.50	150.00
76848	66.00	4,300.00	Dec. 1918	32.25	37.50	Mar. 1924	32.75	125.00
18619				32.25		Mar. 1924	32.25	240.00
13976	5.00	250.00	Dec. 1918	5.00	75.00	Mar. 1924	5.00	300.00
16708	10.00	500.00	-	-	-	Apr. 1924	10.00	300.00
	1271.83	$63,975.00		1183.75	$863.68		1886.33	$5,905.49
Price per Acre		X$ 50.36			X$ .76			X$ 4.92

(X Denotes red in copy.)

1530

JIRGAL EXHIBIT NO. 4

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING DEMAND INFORMATION FOR YEAR 1923

UNITED FUEL GAS COMPANY, INC.

STATEMENT OF MAXIMUM INDIVIDUAL DEMANDS

BY COMMUNITIES AND WHOLESALE CONSUMERS

FOR THE YEAR ENDED DECEMBER 31, 1932

Particulars	Maximum Individual Daily Demands in M. Cubic Feet					Average Daily Demand for Five Highest Days	Adjustments and Transfers	Average Daily Demand As Adjusted	Per Cent of Total
	First Highest	Second Highest	Third Highest	Fourth Highest	Fifth Highest				
RETAIL SERVICE:									
Charleston, West Virginia Division-									
City of Charleston	(J) 28,397	(J) 27,636	(J) 27,386	(F) 27,098	(J) 26,967	27,497	-	27,497	11.57
All Others							7,215	7,215	3.16
Total Charleston Division	28,397	27,636	27,386	27,098	26,967	27,497	7,215	34,712	14.73
Huntington, West Virginia Division-									
City of Huntington	(F) 14,125	(F) 13,968	(F) 13,772	(F) 13,604	(F) 13,196	13,733	922	13,654	5.82
City of Williamson	(F) 1,897	(F) 1,817	(F) 1,815	(F) 1,765	(J) 1,754	1,809	-	1,809	.76
All Others							6,447	6,447	2.73
Total Huntington Division	16,022	15,785	15,587	14,369	13,944	15,542	6,659	21,910	9.12
Spencer, West Virginia Division							1,911	1,911	.80
Ashland, Kentucky Division	(J) 8,180	(F) 7,872	(F) 7,710	(F) 7,208	(F) 7,165	7,487	9,662	17,149	7.20
Ironton, Ohio Division	(J) 5,064	(F) 4,833	(F) 3,869	(F) 3,736	(F) 3,673	4,251	4,181	8,432	3.54
Industrial Consumers Measured Separately	(F) 13,763	(F) 13,367	(J) 13,102	(J) 12,154	(J) 11,958	12,869	* 12,869	-	-
Unmeasured Demand (Estimated)	18,900	18,216	17,941	17,283	17,060	17,880	* 17,880	-	-
Total Retail Service	90,326	87,609	84,577	81,853	80,772	85,042	49,274	84,163	35.39
WHOLESALE SERVICE:									
Columbia Gas and Electric Company	(F) 47,774	(F) 46,798	(F) 46,382	(F) 46,029	(J) 45,847	46,566	-	46,566	19.56
Ohio Fuel Supply Company	(F) 37,725	(F) 37,286	(D) 37,266	(F) 36,937	(F) 36,933	37,229	-	37,229	15.66
Central Kentucky Natural Gas Company	(J) 7,373	(J) 7,221	(J) 7,201	(J) 6,950	(J) 6,927	7,134	-	7,134	3.00
Louisville Gas and Electric Company	(F) 7,481	(J) 6,884	(J) 6,840	(J) 6,027	(F) 5,923	6,431	-	6,431	2.70
Portsmouth Gas Company	(F) 8,939	(F) 8,486	(F) 8,417	(F) 7,783	(F) 7,783	8,282	-	8,282	3.48
Hope Natural Gas Company	(J) 24,396	(J) 22,480	(F) 22,244	(J) 20,450	(F) 20,398	21,994	-	21,994	9.25
Pittsburg and West Virginia Gas Company	(J) 27,074	(J) 26,817	(J) 26,225	(J) 23,346	(J) 22,430	25,178	-	25,178	10.59
All Others							879	879	.37
Total Wholesale Service	160,762	156,722	153,775	147,582	145,951	152,746	879	153,625	64.61
Grand Total	251,088	243,331	238,352	229,345	226,724	237,788	-	237,788	100.00

SUMMARY

Particulars	Average Demand As Adjusted	Per Cent of Total
City of Charleston	27,497	11.57
City of Huntington	13,854	5.83
City of Williamson	1,809	.76
Other West Virginia	15,443	6.49
Total West Virginia	58,603	24.65
Kentucky and Ohio	25,560	10.74
Wholesale Service	153,625	64.61
T o t a l	237,788	100.00

NOTE:
(J) Highest Demand in January
(F) Highest Demand in February
(D) Highest Demand in December
* Not Measured- Included under Unmeasured Demand (Estimated)

(I Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC.

DISTRIBUTION OF DEMAND MILEAGE

FOR THE YEAR ENDED DECEMBER 31, 1933

(Based on Individual Maximum Demands)

Particulars	Average Five Highest Individual Daily Demands	Per Cent	Distance of Transmission in Miles for Peak Load	Demand Times Distance in M. Cubic Feet	Per Cent
RETAIL SERVICE:					
Charleston, West Virginia Division-					
City of Charleston	27,497	11.57	27	742,419	6.13
Other Sales, Charleston Division	7,515	3.16	27	202,908	1.67
Total Charleston Division	35,012	14.73	-	945,326	7.80
Huntington, West Virginia Division-					
City of Huntington	13,854	5.83	65	900,510	7.43
City of Williamson	1,809	.76	69	124,821	1.03
Other Sales, Huntington Division	6,017	2.53	65	391,105	3.23
Total Huntington Division	21,680	9.12	-	1,416,436	11.69
Spencer, West Virginia Division	1,911	.80	4	7,644	.06
Ashland, Kentucky Division	17,176	7.23	80	1,370,320	11.31
Ironton, Ohio Division	8,411	3.54	85	714,935	5.90
Total Retail Service	84,143	35.36	-	4,454,659	36.78
WHOLESALE SERVICE:					
Columbia Gas and Electric Company	46,506	19.56	48	2,232,288	18.43
Ohio Fuel Supply Company	37,237	15.66	36	1,340,532	11.06
Central Kentucky Natural Gas Company	7,139	3.00	58	414,062	3.42
Louisville Gas and Electric Company	6,411	2.70	58	371,838	3.07
Portsmouth Gas Company	6,288	3.48	113	935,864	7.73
Hope Natural Gas Company	21,994	9.25	80	1,099,700	9.08
Pittsburg and West Virginia Gas Company	25,178	10.58	80	1,258,900	10.39
All Others	879	.37	10	8,796	.07
Total Wholesale Service	153,678	64.61	-	7,661,918	63.24
Grand Total	237,768	100.00	-	12,116,577	100.00
SUMMARY:					
City of Charleston	27,497	11.57	-	742,419	6.13
City of Huntington	13,854	5.83	-	900,510	7.43
City of Williamson	1,809	.76	-	124,821	1.03
Other West Virginia	15,443	6.49	-	601,604	4.96
Total West Virginia	58,603	24.65	-	2,369,404	19.55
Kentucky and Ohio	25,340	10.74	-	2,085,255	17.21
Wholesale Service	153,678	64.61	-	7,661,918	63.24
T o t a l	237,768	100.00	-	12,116,577	100.00

UNITED FUEL GAS COMPANY, INC.

DISTRIBUTION OF MAXIMUM DAILY DEMAND ON SYSTEM

CLASSIFIED BETWEEN RETAIL DIVISIONS AND WHOLESALE CONSUMERS

FOR THE YEAR 1923

Particulars	Maximum Daily Demand on System in M. Cubic Feet					Average Daily Demand for Five Days	Adjustments and Transfers	Average Daily Demand as Adjusted	Per Cent of Total
	Feb.13 1923	Feb. 4 1923	Jan.17 1923	Feb.18 1923	Feb. 5 1923				
RETAIL DIVISIONS:									
Charleston, West Virginia Division-									
City of Charleston	27,098	24,659	28,397	24,741	24,281	25,835	-	25,835	12.72
All Others	*	*	*	*	*	*	6,568	6,568	3.24
Total Charleston Division	27,098	24,659	28,397	24,741	24,281	25,835	6,568	32,403	15.96
Huntington, West Virginia Division-									
City of Huntington	14,125	12,190	11,320	13,968	11,681	12,657	X 207	12,450	6.13
City of Williamson	1,738	1,101	1,754	1,707	1,815	1,622	-	1,622	.80
All Others	*	*	*	*	*	*	4,721	4,721	2.32
Total Huntington Division	15,860	13,291	13,074	15,675	13,496	14,279	4,514	18,793	9.25
Spencer, West Virginia Division	*	*	*	*	*	*	1,670	1,670	.82
Ashland, Kentucky Division	7,165	6,325	7,016	7,210	6,961	6,936	6,148	13,084	6.44
Ironton, Ohio Division	3,849	3,178	2,670	4,933	3,602	3,645	3,270	6,915	3.41
Industrial Consumers Measured Seperately	7,583	8,003	8,113	3,995	8,779	7,295	X 7,295	-	-
Unmeasured Demand (Estimated)	17,244	14,318	13,704	18,016	14,938	15,643	X15,643	-	-
Total Retail Service	78,799	69,764	72,976	74,570	72,054	73,633	X 768	72,865	35.88
WHOLESALE CONSUMERS:									
Columbus Gas and Electric Company	46,049	43,734	45,347	47,774	43,554	45,328	-	45,328	22.32
Ohio Fuel Supply Company	37,725	33,445	33,242	36,937	33,963	35,062	-	35,062	17.26
Central Kentucky Natural Gas Company	5,005	3,849	5,545	4,402	4,295	4,615	-	4,615	2.27
Louisville Gas and Electric Company	4,986	7,481	4,366	3,354	4,801	4,598	-	4,598	2.26
Portsmouth Gas Company	7,891	6,813	6,816	8,939	7,088	7,403	-	7,403	3.65
Hope Natural Gas Company	15,815	19,464	4,901	15,337	16,304	13,904	-	13,904	6.85
Pittsburg and West Virginia Gas Company	15,758	19,694	28,223	13,784	17,278	18,542	-	18,542	9.13
All Others	*	*	*	*	*	*	768	768	.38
Total Wholesale Service	130,710	134,488	128,344	128,498	127,283	129,452	768	130,220	64.12
Grand Total	209,509	204,252	199,320	203,068	199,307	203,085	-	203,085	100.00

SUMMARY

Particulars	Average Demand as Adjusted	Per Cent of Total
City of Charleston	25,835	12.72
City of Huntington	12,450	6.13
City of Williamson	1,622	.80
Other West Virginia	12,959	6.38
Total West Virginia	52,866	26.03
Kentucky and Ohio	19,999	9.85
Wholesale Service	130,220	64.12
T o t a l	203,085	100.00

(X Denotes red in copy.)

* Not Measured - Included under Unmeasured Demand (Estimated).

UNITED FUEL GAS COMPANY, INC.

DISTRIBUTION OF DEMAND MILEAGE

FOR THE YEAR ENDED DECEMBER 31, 1945

(Based on maximum system demand)

Particulars	Distribution of Demand at Time of System Maximum	Per Cent	Distance of Transmission in Miles for Peak Load	Demand Times Distance in M. Cubic Feet	Per Cent
RETAIL SERVICE:					
Charleston, West Virginia Division-					
City of Charleston	20,836	10.24	27	667,540	6.68
Other Sales Charleston Division	8,568	5.24	27	177,336	1.74
Total Charleston Division	32,403	15.96	-	874,881	8.58
Huntington, West Virginia Division-					
City of Huntington	12,650	6.13	62	809,250	7.98
City of Williamson	1,622	.80	69	111,918	1.10
Other Sales, Huntington Division	4,721	2.34	65	306,865	3.01
Total Huntington Division	18,793	9.25	-	1,228,033	12.06
Spencer, West Virginia Division-	1,670	.82	4	6,680	.07
Ashland, Kentucky Division	13,084	6.44	80	1,048,720	10.28
Ironton, Ohio Division	6,918	3.41	82	567,775	5.57
Total Retail Service	73,868	36.88	-	3,744,089	36.77
WHOLESALE SERVICE:					
Columbia Gas and Electric Company	46,328	22.82	48	2,178,744	21.37
Ohio Fuel Supply Company	32,062	17.46	36	1,154,232	11.40
Central Kentucky Natural Gas Company	4,818	2.37	58	267,870	2.63
Louisville Gas and Electric Company	4,548	2.24	58	466,684	4.64
Portsmouth Gas Company	7,403	3.65	113	836,339	8.21
Hope Natural Gas Company	10,904	5.32	80	872,320	8.56
Pittsburgh and West Virginia Gas Company	18,542	9.13	80	947,100	9.30
All Others	768	.38	10	7,040	.07
Total Wholesale Service	130,220	64.12	-	6,438,849	63.23
Grand Total	203,088	100.00	-	10,182,938	100.00
DEMAND:					
City of Charleston	22,836	11.24	-	597,540	5.87
City of Huntington	12,650	6.23	-	809,250	7.95
City of Williamson	1,622	.80	-	111,918	1.10
Other West Virginia	44,989	8.38	-	450,865	4.34
Total West Virginia	84,866	36.03	-	3,109,594	20.74
Kentucky and Ohio	15,959	7.85	-	1,034,490	10.00
Wholesale Service	130,220	64.12	-	6,438,849	63.23
Total	203,088	100.00	-	10,182,938	100.00

UNITED FUEL GAS COMPANY, INC.

STATEMENT OF DAILY DEMAND

BY THE PRINCIPAL WHOLESALE CONSUMERS AND RETAIL DISTRICTS

MONTH OF JANUARY 1938

Day of Month	Wholesale Consumers							Retail Districts						Total Send-Out by Days
	Columbia Gas and Electric Company	Ohio Fuel Supply Company	Hope Natural Gas Company	Pittsburgh and West Virginia Gas Company	Central Kentucky Natural Gas Company	Louisville Gas and Electric Company	Portsmouth Gas Company	Ironton and Coal Grove	Ashland and Catlettsburg	Huntington and Kenova	Williamson	Charleston	Industrials Measured Separately	
1	30,728	29,104	14,487	15,334	5,587	3,794	5,459	2,393	5,143	10,311	1,347	21,303	6,732	151,619
2	33,996	33,985	14,458	14,810	6,582	3,614	5,459	2,679	5,249	10,001	1,327	23,646	7,251	161,727
3	33,095	28,288	14,510	14,686	6,360	3,683	5,618	2,834	4,987	10,038	1,321	22,344	7,573	157,021
4	40,184	34,327*	15,113	14,216	6,714	4,442	5,694	2,643	5,347	10,734	1,380	24,003	7,648	172,438
5	33,513	34,100	14,919	13,009	6,740	4,031	5,148	2,256	4,691	9,394	1,287	22,487	7,811	159,254
6	36,418	31,818	15,068	13,508	7,201	3,740	5,668	2,382	4,241	9,624	1,278	21,462	7,106	159,212
7	31,448	33,250	13,060	13,731	6,618	3,983	4,676	2,137	5,009	8,984	1,260	19,691	6,034	149,878
8	35,060	29,378	15,913	12,949	5,786	3,978	5,459	2,640	4,932	9,980	1,318	22,493	7,681	157,493
9	37,034	29,880	14,787	14,082	6,802	4,263	5,787	2,773	4,404	10,391	1,416	22,621	9,549	163,239
10	38,856	33,118	14,148	14,368	6,960	5,338	6,229	3,058	5,440	11,372*	1,498	25,715	8,914	174,014
11	37,236	29,280	13,830	15,026	7,373*	5,246	5,459	2,899	5,126	10,455	1,412	24,407	8,771	166,222
12	37,979	30,885	14,644	14,367	6,396	5,787	5,767	2,748	4,442	10,293	1,310	23,229	9,971	167,758
13	40,426	29,418	12,993	15,643	6,159	6,584*	6,061	2,824	5,390	10,942	1,431	25,195	6,803	171,369
14	30,274	29,280	13,284	16,608	5,841	2,747	4,909	1,972	4,294	8,838	1,015	19,043	9,171	147,263
15	35,830	29,284	12,966	15,234	5,440	6,040	5,767	2,786	4,808	10,468	1,443	24,666	10,175	164,881
16	41,360	32,849	8,742	20,993	6,693	6,027	5,928	3,095	5,810	11,279	1,552	27,636	9,989	180,693
17	43,847*	33,242	4,901	26,228	5,545	4,366	6,316	2,670	7,018	11,320	1,754*	28,397*	6,113	185,616*
18	36,274	29,250	4,903	27,074*	7,231	5,153	4,713	2,348	8,180*	8,156	1,371	22,534	10,076	167,168
19	34,127	27,131	9,823	20,292	5,853	3,435	5,222	2,840	4,287	8,704	1,310	23,652	10,829	169,085
20	33,082	29,816	12,587	14,388	5,733	2,264	4,984	2,279	3,955	8,660	1,256	23,640	8,623	155,328
21	30,364	29,089	12,354	16,437	5,021	1,829	4,648	2,279	4,237	7,877	950	18,827	7,224	141,113
22	39,956	33,830	11,909	17,181	6,896	3,574	5,928	2,780	5,696	10,238	1,433	24,845	10,571	174,807
23	45,279	29,280	7,593	23,348	5,190	5,295	6,858*	3,369*	4,999	10,892	1,801	26,967	11,958	182,534
24	44,081	29,280	4,898	26,817	6,509	5,039	6,006	2,817	5,870	10,440	1,480	24,264	10,983	178,423
25	41,479	29,346	8,134	22,430	6,164	4,934	5,771	2,898	5,325	10,116	1,493	15,064	11,122	164,273
26	38,009	29,381	13,863	15,677	6,567	4,956	5,344	2,716	5,194	9,270	1,347	23,160	9,677	165,343
27	31,243	29,699	14,076	10,638	5,969	2,456	4,782	2,139	4,748	8,325	1,188	20,859	9,570	149,683
28	29,587	30,084	20,450	9,947	6,222	1,627	5,068	2,279	5,010	8,901	1,309	18,982	9,470	148,876
29	36,988	32,264	22,480	10,090	6,687	4,388	5,789	2,871	4,670	9,864	1,739	22,776	13,102*	175,698
30	34,856	29,722	22,344	16,312	6,937	3,784	5,344	2,646	4,638	7,932	1,378	21,877	12,184	173,428
31	33,134	27,510	24,396*	17,281	5,470	1,733	4,148	1,976	4,502	6,928	1,270	19,269	11,498	159,135
Total	1,136,921	949,451	421,202	516,394	194,348	138,327	170,166	80,294	157,827	300,515	42,667	705,084	287,470	5,084,366

* Denotes maximum Daily Demand for Month.

UNITED FUEL GAS COMPANY, INC.

STATEMENT OF DAILY DEMAND

BY THE PRINCIPAL WHOLESALE CONSUMERS AND RETAIL DISTRICTS

MONTH OF FEBRUARY 1925

	Wholesale Consumers							Retail Districts							
Day of Month	Columbia Gas and Electric Company	Ohio Fuel Supply Company	Hope Natural Gas Company	Pittsburgh and West Virginia Gas Company	Central Kentucky Natural Gas Company	Louisville Gas and Electric Company	Portsmouth Gas Company	Ironton and Coal Grove	Ashland and Catlettsburg	Huntington and Kenova	Williamson	Charleston	Industrials Measured Separately	Total Send-Out by Days
1	25,252	27,387	16,659	14,270	3,929	633	5,876	1,636	5,624	6,437	1,414	17,147	11,548	133,712
2	25,827	23,956	15,369	14,110	3,978	1,528	4,102	1,788	4,142	6,838	984	17,130	10,209	129,934
3	37,135	28,406	19,014	16,659	5,664	3,515	5,938	2,583	5,202	9,995	1,373	20,482	8,765	164,693
4	43,734	33,445	19,462	19,694*	5,829	7,481*	6,813	3,172	6,325	12,190	1,101	24,859	8,003	189,908
5	43,554	33,963	16,304	17,278	4,295	4,861	7,058	3,602	6,961	11,681	1,815	24,281	8,779	184,372
6	44,323	28,306	16,921	17,900	4,669	4,916	7,231	3,651	5,318	11,548	1,494	23,029	10,845	180,361
7	43,191	31,104	16,536	17,326	5,182	4,563	6,856	3,390	6,147	10,725	1,645	23,254	10,768	180,789
8	36,450	27,804	18,007	18,307	5,796	4,869	5,338	2,743	4,812	9,319	1,371	22,847	13,367	171,229
9	37,396	30,209	17,136	18,576	6,262*	4,157	5,924	2,824	4,593	9,490	1,349	22,732	13,763*	174,431
10	40,609	33,194	16,028	17,218	4,950	4,287	6,700	2,491	5,003	11,313	1,386	24,697	11,186	181,059
11	39,506	30,377	15,743	17,277	5,989	5,351	6,158	2,721	5,389	10,807	1,231	22,876	9,649	173,074
12	39,764	32,414	16,565	17,342	5,660	4,932	6,006	2,949	5,367	10,112	1,337	23,104	9,355	176,927
13	30,749	29,499	20,396*	15,139	5,606	4,708	4,596	2,162	4,180	8,242	921	18,707	11,506	156,415
14	42,241	31,389	15,570	17,450	4,451	4,544	7,556	3,736	5,067	11,974	1,430	24,997	11,601	183,006
15	46,029	37,725*	15,516	15,758	5,006	2,966	7,691	3,849	7,165	14,128*	1,735	27,098	7,583	192,265
16	44,798	36,933	15,521	13,830	4,672	3,343	8,417	3,673	7,205	12,604	1,817	25,068	4,799	182,680
17	46,382	36,461	15,389	13,838	4,957	4,141	8,486	3,064*	7,372*	13,272	1,763	24,062	4,681	184,158
18	47,774*	36,937	15,357	13,754	4,602	3,382	8,939*	4,933	7,210	15,968	1,707	24,741	5,995	185,048
19	44,636	37,328	15,320	13,774	4,507	3,349	7,783	3,590	6,188	11,936	1,897*	25,908	5,434	179,688
20	41,019	31,104	13,431	13,606	4,758	3,988	7,423	3,528	6,023	11,368	1,735	28,378	10,374	173,928
21	38,184	32,732	13,736	14,038	4,437	5,031	6,772	3,299	5,831	10,356	1,634	25,647	11,367	173,107
22	40,438	33,126	13,289	13,705	4,478	4,043	7,149	3,578	6,657	11,313	1,653	27,368*	8,814	175,631
23	42,474	34,341	13,316	14,257	5,940	3,503	7,783	3,632	7,001	11,394	1,765	24,228	8,481	176,015
24	43,282	31,769	14,902	14,801	5,999	3,914	6,856	2,838	6,511	10,800	1,660	22,386	9,810	173,448
25	36,127	29,450	17,913	17,779	5,916	5,823	5,459	2,076	5,787	7,987	1,228	19,684	7,381	160,630
26	29,773	27,959	17,144	16,659	2,802	5,736	5,302	2,382	4,721	7,821	1,571	22,472	10,199	150,291
27	31,556	29,731	17,367	17,279	4,019	5,379	5,203	2,178	4,311	8,385	1,525	21,551	11,175	159,401
28	34,192	30,282	17,969	18,039	4,332	5,003	4,874	2,574	5,136	9,176	1,576	22,010	9,745	164,207
Total	1,096,327	886,111	447,734	450,065	130,708	119,971	181,966	86,629	159,367	295,143	41,417	649,490	263,382	4,810,340

* Denotes Maximum Daily Demand for Month.

UNITED FUEL GAS COMPANY, INC.

STATEMENT OF DAILY DEMAND

BY THE PRINCIPAL WHOLESALE CONSUMERS AND RETAIL DISTRICTS

MONTH OF DECEMBER 1928

Day of Month	Wholesale Consumers							Retail Districts						
	Columbia Gas and Electric Company	Ohio Fuel Supply Company	Hope Natural Gas Company	Pittsburgh and West Virginia Gas Company	Central Kentucky Natural Gas Company	Louisville Gas and Electric Company	Portsmouth Gas Company	Ironton and Coal Grove	Ashland and Catlettsburg	Huntington and Kenova	Williamson	Charleston	Industrials Measured Separately	Total Send-Out by Days
1	24,868	33,830	16,879	15,099	3,847	4,806*	3,047	2,088	4,804	7,986	1,279	19,834	6,861	144,416
2	21,849	28,923	17,206	15,279	4,096	4,343	2,976	1,962	4,806	8,346	1,106	17,573	7,296	136,757
3	22,624	31,780	17,238*	15,213	6,049	4,191	2,837	2,066	4,330	7,230	1,180	18,438	9,717	142,963
4	20,218	30,969	16,861	15,097	5,348	3,027	4,786	2,180	4,649	7,968	1,186	19,006	9,863	141,174
5	21,934	27,978	16,963	15,562	5,010	3,044	4,118	2,970*	5,000	6,604	1,096	17,144	9,436	134,886
6	25,881	31,176	16,979	15,079	6,219*	4,496	5,780	2,308	5,364	10,190	1,068	20,400	9,802	154,709
7	29,712	36,780	17,199	15,242	5,126	4,747	5,088	2,191	5,059	8,574	1,395	20,815	9,964*	160,852
8	20,866	29,158	16,972	14,176	4,438	3,068	4,088	1,670	3,601	6,552	1,136	16,062	8,868	130,317
9	13,787	28,873	16,900	15,436	3,905	3,096	3,328	1,283	3,109	5,366	765	13,477	8,288	114,253
10	23,311	32,526	16,909	15,301	3,549	3,066	3,812	1,804	3,091	5,361	988	14,726	9,176	132,320
11	31,650	36,818	16,862	14,803	5,888	3,438	4,209	2,237	4,259	7,907	1,221	19,528	9,286	157,099
12	34,344	36,678	17,079	14,643	5,286	3,601	4,648	2,306	4,530	7,876	1,229	20,837	8,777	161,685
13	31,432	33,176	16,918	15,018	4,817	3,126	4,912	2,341	4,638	7,950	1,119	18,981	8,884	153,140
14	43,215	36,789	17,263	15,188	4,003	3,102	6,255	2,960	5,857	10,557	1,578	25,313	9,200	180,368
15	44,482*	38,384	16,992	16,161	4,858	3,108	6,394*	2,899	6,947*	10,834*	1,587*	26,770*	7,188	182,404*
16	34,549	32,688	17,081	16,410*	4,606	3,068	5,229	2,319	5,832	9,232	1,259	20,091	7,431	159,745
17	34,888	32,892	17,081	15,896	4,988	3,300	5,617	2,686	6,388	9,501	1,459	24,718	9,084	167,791
18	33,883	33,886	17,086	15,309	4,664	3,358	5,430	2,673	5,914	9,523	1,513	23,349	9,179	164,709
19	30,860	32,811	16,919	15,360	4,376	3,298	5,192	2,146	6,136	8,653	1,480	21,470	8,724	155,421
20	24,401	32,688	16,883	15,281	4,280	3,064	4,348	2,094	4,491	8,433	1,336	19,317	8,864	141,377
21	17,988	28,218	16,973	15,283	3,862	3,271	3,883	1,663	3,710	5,998	1,064	16,416	8,048	129,498
22	16,696	31,170	16,883	15,904	3,485	3,283	3,409	1,369	4,113	5,836	966	15,186	8,938	128,327
23	20,537	30,878	16,896	15,307	3,781	3,167	4,209	1,663	3,009	7,420	1,011	13,968	8,286	127,084
24	27,817	27,866*	17,106	13,084	4,644	3,130	5,280	2,340	5,212	8,766	1,383	18,629	4,307	148,984
25	31,966	33,082	17,169	13,404	4,383	3,163	5,256	2,262	5,346	9,500	1,208	17,087	2,447	146,848
26	27,988	30,804	17,276	11,982	4,816	3,117	5,114	2,456	5,427	9,172	1,300	19,481	3,099	146,719
27	26,838	28,188	17,068	12,871	4,209	3,258	4,603	2,167	4,411	7,902	1,141	18,211	3,286	143,461
28	27,874	28,121	17,110	13,245	4,266	3,159	4,996	2,318	4,615	8,734	1,064	16,985	3,978	148,448
29	29,886	30,966	17,296	14,183	4,488	3,344	5,148	2,374	6,172	8,894	1,300	19,081	8,414	182,384
30	21,908	34,884	16,908	14,114	3,728	3,113	4,224	1,705	3,786	7,939	1,083	15,277	8,641	154,111
31	20,086	32,842	16,836	13,734	3,700	3,167	4,209	1,707	3,828	6,304	1,478	14,876	7,238	129,729
Total	837,316	1,021,498	527,756	461,843	130,686	108,229	142,079	66,953	148,427	249,108	37,968	584,998	284,618	4,844,840

* Denotes Maximum Daily Demand for Month.

JIRGAL EXHIBIT NO. 5

UNITED FUEL GAS COMPANY. INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

DETAILED STATEMENTS PER BOOKS

FOR THE YEAR ENDED DECEMBER 31, 1923

SUPPORTING CONCLUSIONS REACHED

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIAR

AND

VIRGINIAN GASOLINE AND OIL COMPANY

BALANCE SHEET — DECEMBER

ASSETS	United Fuel Gas Company	Garfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	United Fuel Gas Company and Subsidiaries	Virginian Gasoline and Oil Company	Consolidated
PROPERTY, PLANT, RIGHTS, FRANCHISES, ETC.:							
Gas Department	$57,108,115.52	$1,835,153.87	$ 698,830.65	$ -	$59,636,100.24	$ -	$59,636,100.24
Gasoline Department	-	-	48,532.14	-	48,532.14	1,704,770.67	1,750,302.81
Oil Department	-	-	1,897,444.64	-	1,897,444.64	10,552,465.54	12,449,910.18
Carbon Black Department	-	-	-	-	-	113,868.44	113,868.44
Incomplete Construction	106,717.70	3,471.60	308.37	-	110,497.67	8,536.69	119,034.16
	$57,211,833.22	$1,838,625.47	$2,639,116.00	$ -	$61,689,574.69	$12,379,641.14	$74,069,215.83
INVESTMENTS:							
Securities Owned	$ 865,452.44	$ -	$ -	X $677,000.00	$ 188,452.44	$ -	$ 188,452.44
Sinking Fund Investments	1,052,887.76	-	-	-	1,052,887.76	156,408.99	1,209,296.75
Reacquired Securities	103,053.00	-	-	-	103,053.00	-	103,053.00
	$ 2,021,393.20	$ -	$ -	X $677,000.00	$ 1,344,393.20	$ 156,408.99	$ 1,500,802.19
DEFERRED CHARGES:							
Prepaid Insurance	$ 39,319.07	$ 1,658.46	$ 1,219.27	$ -	$ 42,196.82	$ 34,057.23	$ 76,254.05
Prepaid Rentals	150,000.00	-	-	-	150,000.00	-	150,000.00
Prepaid Taxes	10,974.39	270.98	60.00	-	11,305.37	3,667.50	14,972.87
	$ 190,293.46	$ 1,929.44	$ 1,279.27	$ -	$ 193,502.19	$ 37,724.73	$ 231,226.92
CURRENT ASSETS:							
Cash	$ 879,382.47	$ 113,924.80	$ 7,744.22	$ -	$ 1,001,051.49	$ 526,776.28	$ 1,527,823.77
Notes Receivable	15,208.95	-	-	-	15,208.95	-	15,208.95
Accounts Receivable-							
Customers	262,371.31	66,550.76	-	-	328,922.07	-	328,922.07
Miscellaneous	1,148,975.98	36,139.47	5,123.04	X 158,065.44	992,169.05	321,974.83	1,314,143.38
Inter-Company (Net)	X 307,451.73	X 14,813.20	4,833.19	-	X 327,421.03	227,421.03	-
Materials and Supplies	248,251.13	10,813.84	3,128.91	-	272,324.68	141,964.16	414,288.84
	$ 2,347,988.92	$ 233,532.37	$ 20,829.36	X $158,065.44	$ 2,404,268.21	$ 1,218,132.00	$ 3,622,397.21
	$61,771,488.80	$2,074,087.30	$2,661,224.63	X $677,000.00	$65,631,738.29	$13,791,936.86	$79,413,672.15

(X Denotes red in copy.)

CAPITAL STOCK							
FUNDED DEBT:							
First Mortgage							
CURRENT LIABILITIES:							
Accounts Payable							
Accrued Taxes							
Accrued Interest							
Security Deposits							
Unclaimed Accounts							
RESERVES:							
Depletion and Actual Cost							
Depletion Reserve							
Contingent Reserve							
CAPITAL SURPLUS							
SURPLUS:							
Appropriated							
Unappropriated							

ITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

E SHEET — DECEMBER 31, 1923

...ian ...ne and ...mpany	Consolidated	LIABILITIES	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	United Fuel Gas Company and Subsidiaries	Virginian Gasoline and Oil Company	Consolidated
		CAPITAL STOCK							
-	$39,636,100.24		$30,000,000.00	$ 547,000.00	$ 130,000.00	X$677,000.00	$30,000,000.00	$ 890,200.00	$30,890,200.00
4,770.67	1,750,302.81								
3,465.34	12,449,910.18	FUNDED DEBT:							
3,868.44	113,868.44	First Mortgage 6% Bonds Outstanding	$ 8,449,000.00	$ 755,000.00	$ -	$ -	$ 9,204,000.00	$ 1,717,000.00	$10,921,000.00
8,536.49	119,034.16								
9,641.14	$74,069,215.83	CURRENT LIABILITIES:							
		Accounts Payable	$ 190,114.37	$ 193,820.24	$ 49,304.28	X$198,065.44	$ 235,173.42	$ 41,404.77	$ 276,578.19
		Accrued Taxes	499,744.87	-	97.46	-	499,842.03	207,753.48	707,595.48
		Accrued Interest	16,632.17	121.14	-	-	16,653.31	-	16,653.31
-	$ 188,452.44	Security Deposits	122,160.00	7,075.00	-	-	129,235.00	-	129,235.00
6,408.99	1,209,296.75	Unclaimed Accounts	9,174.72	14.28	92.32	-	9,281.36	-	9,281.36
-	103,053.00								
6,408.99	$ 1,500,802.19		$ 837,725.83	$ 201,030.70	$ 49,494.03	X$198,065.44	$ 890,185.12	$ 249,158.22	$ 1,139,343.34
		RESERVES:							
		Depletion and Depreciation Reserve Based on Actual Cost of Property	$ 9,267,814.44	$ 638,177.62	$ 419,248.37	$ -	$10,325,240.43	$ 2,466,872.35	$12,791,812.78
4,087.23	$ 56,284.05		8,662,630.70	-	846,468.78	-	9,509,099.48	1,645,013.61	11,154,113.09
-	150,000.00	Depletion Reserve Based on Appraisal Value	-	38,723.93	-	-	38,723.93	-	38,723.93
5,667.50	14,972.87	Contingent Reserve							
9,754.73	$ 221,256.92		$17,930,445.14	$ 673,901.55	$1,265,717.15	$ -	$19,870,063.84	$ 4,111,885.96	$23,981,649.80
		CAPITAL SURPLUS FROM APPRAISAL	$ 2,225,280.72	$ -	$ 973,911.83	$ -	$ 3,199,192.55	$ 6,328,103.63	$ 9,527,296.18
6,778.28	$ 1,527,823.77								
-	15,208.95	SURPLUS:							
-	350,922.07	Appropriated for Sinking Fund Purposes	$ 1,506,411.90	$ 16,388.34	$ -	$ -	$ 1,522,770.24	$ 224,710.39	$ 1,747,480.63
2,974.83	1,314,143.58	Unappropriated	822,625.21	X119,203.29	242,101.62	-	945,523.54	261,178.66	1,206,702.20
7,421.03	-		$ 2,329,037.11	$ 102,844.95	$ 242,101.62	$ -	$ 2,468,293.78	$ 485,889.05	$ 2,954,182.83
1,944.16	414,298.84								
8,132.00	$ 3,622,397.21								
6,936.86	$79,413,672.15		$61,771,468.80	$2,074,087.30	$2,661,224.63	X$479,065.41	$65,631,735.29	$13,781,936.86	$79,413,672.15

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VIRGINIAN GASOLINE AND OIL COMPANY

COMPARISON OF INCOME ACCOUNT

FOR THE YEARS ENDED DECEMBER 31, 1922 AND 1923

Particulars	Year Ended December 31, 1922					
	United Fuel Gas Company	Cabin Creek Gas Company	United Fuel Gas Company and Subsidiary Consolidated	Virginian Gasoline and Oil Company (Eight Months)	Combined	United Gas Co
GROSS EARNINGS:						
Gas Department	$7,830,024.60	$ 46,347.79	$7,228,489.01	$ -	$ 7,228,489.01	$7,719,
Gasoline Department	1,206,225.06	21,243.28	1,226,468.33	1,836,832.00	3,063,300.33	
Oil Department	187,830.60	47,683.96	206,484.46	300,056.88	506,541.34	
Carbon Black Department	38,813.01	-	38,813.01	101,044.91	136,857.92	
Tank Car Department	19,335.74	-	19,335.74	39,381.64	58,717.38	
Total Gross Earnings	$8,648,228.90	$115,245.03	$8,715,590.55	$2,287,315.43	$10,982,906.98	$7,719,
OPERATING EXPENSES AND ORDINARY TAXES:						
Gas Department	$3,324,649.19	$ 25,857.71	$3,302,323.52	$ -	$ 3,302,323.52	$3,449,
Gasoline Department	14,693.47	4,389.96	19,083.43	483,948.66	503,032.09	×367,
Oil Department	45,089.97	17,325.30	62,415.27	104,934.57	167,349.84	
Carbon Black Department	×3,733.09	-	×3,733.09	29,636.46	25,903.37	×18,
Tank Car Department	2,778.67	-	2,778.67	9,852.83	12,608.40	
Total Operating Expenses and Taxes	$3,383,478.11	$ 47,272.97	$3,382,864.70	$ 628,352.52	$ 4,011,217.22	$3,068,
NET EARNINGS FROM OPERATIONS (Before Federal Taxes, Depletion and Depreciation):						
Gas Department	$3,905,375.41	$ 20,790.08	$3,926,165.49	$ -	$ 3,926,165.49	$4,269,
Gasoline Department	1,190,831.58	16,853.32	1,207,384.90	1,342,883.34	2,550,268.24	367
Oil Department	112,740.53	30,328.66	143,069.19	195,122.31	338,191.50	
Carbon Black Department	39,846.10	-	39,846.10	71,408.48	110,954.53	18
Tank Car Department	16,560.17	-	16,560.17	29,548.81	46,108.98	
	$5,284,753.79	$ 67,972.06	$5,332,725.85	$1,638,962.91	$ 6,971,688.76	$4,655
OTHER INCOME	42,213.08	×53.38	42,159.70	4,921.50	47,081.20	22
Total Net Earnings (Before Federal Taxes, Depletion and Depreciation)	$5,326,966.87	$ 67,918.68	$5,374,885.55	$1,643,884.41	$ 7,018,769.96	$4,677
DEDUCTIONS FROM NET EARNINGS:						
Bond Interest	$ 680,295.87	$ -	$ 680,295.87	$ 65,660.00	$ 745,955.87	$ 480
General Interest	5,865.65	4,950.76	10,816.41	-	10,816.41	80
Appropriations to Sinking Fund	730,016.64	-	730,016.64	51,822.24	781,838.88	560
	$1,416,178.16	$ 4,950.76	$1,421,128.92	$1,117,482.24	$ 1,538,611.16	$1,088
Surplus Net Income before Federal Taxes, Depletion and Depreciation	$3,890,788.71	$ 62,967.92	$3,953,756.63	$1,526,402.17	$ 5,480,158.80	$3,617
PROFIT AND LOSS ADJUSTMENTS	44,302.23	×3,499.34	40,802.89	×11,316.15	29,486.74	×2
Surplus Net Income before Federal Taxes, Depletion and Depreciation	$3,935,090.94	$ 59,468.58	$3,994,559.52	$1,515,086.02	$ 5,509,645.54	$3,60

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928 AND 1923

Year Ended December 31, 1923

ombined	United Fuel Gas Company	Warfield Natural Gas Company (Six Months)	Cabin Creek Gas Company	United Fuel Gas Company and Subsidiaries Consolidated	Virginian Gasoline and Oil Company	Combined
226,489.01	$7,719,449.99	$487,707.68	$ 39,893.34	$7,730,176.40	$ -	$ 7,730,176.40
063,300.53	-	-	49,816.43	49,816.43	2,964,044.10	3,013,860.53
608,541.34	-	-	38,243.99	38,243.99	379,530.82	417,774.81
136,857.92	-	-	-	-	145,426.96	145,426.96
88,717.38	-	-	-	-	81,340.70	81,340.70
962,906.98	$7,719,449.99	$487,707.68	$127,953.76	$7,818,236.82	$3,570,342.58	$11,388,579.40
302,323.52	$3,449,936.56	$466,353.43	$ 23,041.30	$3,422,456.68	$ -	$ 3,422,456.68
305,032.09	×367,941.70	-	23,870.70	×344,071.00	1,191,094.62	847,023.62
167,349.84	-	-	16,177.64	16,177.64	133,398.83	149,576.47
25,903.37	×16,347.97	-	-	×16,347.97	34,990.21	18,642.24
12,608.40	-	-	-	-	29,186.00	29,186.00
011,217.22	$3,065,646.89	$466,353.43	$ 63,089.64	$3,078,215.35	$1,388,669.66	$ 4,466,885.01
926,166.49	$4,269,813.43	$ 21,354.25	$ 16,852.04	$4,307,719.72	$ -	$ 4,307,719.72
550,868.24	367,941.70	-	28,945.73	393,887.43	1,772,949.48	2,166,836.91
338,191.50	-	-	22,066.36	22,066.36	246,131.99	268,198.34
110,964.55	16,347.97	-	-	16,347.97	110,436.75	126,784.72
46,108.98	-	-	-	-	52,184.70	52,184.70
971,688.76	$4,653,803.10	$ 21,354.25	$ 64,864.12	$4,740,021.47	$2,181,672.92	$ 6,921,694.39
47,081.20	23,597.00	-	-	23,597.00	27,445.52	51,042.52
018,769.96	$4,677,400.10	$ 21,354.25	$ 64,864.12	$4,763,618.47	$2,209,118.44	$ 6,972,736.91
745,965.87	$ 480,150.80	$ 22,650.00	$ -	$ 502,800.80	$ 94,581.08	$ 597,381.88
10,816.41	30,210.56	207.49	1,350.00	31,768.05	-	31,768.05
781,838.88	549,311.93	16,358.34	-	565,670.27	84,604.23	650,274.50
538,611.16	$1,059,673.29	$ 39,215.83	$ 1,350.00	$1,100,239.12	$ 179,185.31	$ 1,279,424.43
480,158.80	$3,617,726.81	×$ 17,861.58	$ 63,514.12	$3,663,379.35	$2,029,933.13	$ 5,693,312.48
29,486.74	×12,011.49	200.10	×2,729.56	×15,210.95	×3,055.49	×18,266.43
509,645.54	$3,605,715.32	×$ 17,661.48	$ 60,714.56	$3,648,168.40	$2,026,877.64	$ 5,675,046.05

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VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF SURPLUS FOR THE YEARS ENDED DECEMBER 31, 1922 AND 19

Year Ended December 31, 1922

EARNED SURPLUS	United Fuel Gas Company	Cabin Creek Gas Company	Total United Fuel Gas Company and Subsidiary	Virginian Gasoline and Oil Company	Consolidated	United Gas C
BALANCE AT BEGINNING OF PERIOD	$ 761,184.99	$ 261,711.87	$ 1,022,896.86	$ -	$ 1,022,896.86	$ 68
ADD- SURPLUS NET INCOME	3,938,090.94	59,468.58	3,994,559.52	1,515,086.02	5,509,645.54	3,600
Balance	$4,696,275.93	$ 321,180.45	$ 5,017,456.38	$1,515,086.02	$ 6,532,542.40	$3,67
DEDUCT:						
Dividends	$2,850,000.00	$ -	$ 2,850,000.00	$ 600,000.00	$ 3,450,000.00	$1,450
Provision for Depletion and Depreciation on Book Cost of Property	1,340,321.46	65,816.06	1,406,137.52	381,586.89	1,787,724.41	1,231
Provision for Federal Income Taxes	270,752.68	-	270,752.68	126,931.92	397,684.60	113
Reserve for Sinking Fund on Bonds Retired	11,780.86	-	11,780.86	-	11,780.86	X 18
Suspense Earnings in Litigation	-	-	-	-	-	X 10
Premium on Bonds Retired	12,743.71	-	12,743.71	-	12,743.71	13
Unamortized Discount on Bonds Retired	15,905.72	-	15,905.72	-	15,905.72	13
Depreciation and Adjustment	125,936.64	5,965.56	131,902.20	11,465.76	143,367.96	72
Sundry Debits	-	4,237.13	4,237.13	14,500.26	18,737.39	
Total Deductions	$4,627,441.07	$ 76,018.75	$ 4,703,459.82	$1,134,484.83	$ 5,837,944.65	$2,661
BALANCE AT END OF PERIOD	$ 68,834.86	$ 245,161.70	$ 313,996.56	$ 380,601.19	$ 694,597.75	$ 824
CAPITAL SURPLUS CREATED BY APPRAISAL						
BALANCE AT BEGINNING OF PERIOD	$12,500,797.99	$ 562,942.46	$13,063,740.45	$ -	$13,063,740.45	$3,87
ADD:						
Amount Created by Appraisal of Oil Acreage	-	775,000.00	775,000.00	-	775,000.00	
Amount Created by Appraisal of Properties Purchased	-	47,382.80	47,382.80	-	47,382.80	
Amount Transferred to Virginian Gasoline and Oil Company	X6,536,694.21	-	X6,536,694.21	6,536,694.21	-	
Balance	$ 5,964,103.78	$1,385,325.26	$ 7,349,429.04	$6,536,694.21	$13,886,123.25	$3,87
DEDUCT:						
Provision for Depletion and Depreciation of Value Added through Appraisal	$ 1,194,164.75	$ 391,906.27	$ 1,586,071.02	$ 131,511.30	$ 1,717,582.32	$1,65
Stock Dividend (Being Total Capital Stock of Virginian Gasoline and Oil Company)	890,200.00	-	890,200.00	-	890,200.00	
Total Deductions	$ 2,084,364.75	$ 391,906.27	$ 2,476,271.02	$ 131,511.30	$ 2,607,782.32	$1,65
BALANCE AT END OF PERIOD	$ 3,879,739.03	$ 993,418.99	$ 4,873,158.02	$6,405,182.91	$11,278,340.93	$2,22

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COMPANY

EMBER 31, 1932 AND 1933

Consolidated	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Total United Fuel Gas Company and Subsidiaries	Virginian Gasoline and Oil Company	Consolidated
			Year Ended December 31, 1933			
$ 1,022,896.86	$ 68,834.86	$ -	$345,161.70	$ 313,996.56	$ 380,601.19	$ 694,597.75
5,809,645.54	3,605,115.32	Y 17,661.48	60,714.56	3,648,168.40	2,026,877.65	5,675,046.05
$ 6,832,542.40	$3,675,950.18	$ 17,661.48	$305,876.26	$3,962,164.96	$2,407,478.84	$ 6,369,643.80
$ 3,450,000.00	$1,450,000.00	$ -	$ -	$1,450,000.00	$1,550,000.00	$ 3,000,000.00
1,787,724.41	1,231,916.31	95,748.01	61,569.32	1,389,233.64	372,818.03	1,762,051.67
307,884.60	113,308.08	-	-	113,308.08	205,443.20	318,951.28
11,780.86	×186,500.00	-	-	×186,500.00	-	×186,500.00
-	×108,527.87	-	-	×108,527.87	-	×108,527.87
12,743.71	141,098.57	-	-	141,098.57	-	141,098.57
15,908.72	137,186.85	-	-	137,186.85	-	137,186.85
143,367.96	72,643.03	5,793.80	2,205.32	80,642.15	18,038.95	98,681.10
18,737.39	-	-	-	-	-	-
$ 5,837,944.65	$2,851,324.97	$101,541.81	$ 63,774.64	$3,016,641.42	$2,146,300.18	$ 5,162,941.60
$ 694,597.75	$ 824,625.21×	$119,203.29	$242,101.62	$ 945,523.54	$ 261,178.66	$ 1,206,702.20
$13,063,740.45	$3,879,739.03	$ -	$993,418.99	$4,873,158.02	$6,405,182.91	$11,278,340.93
775,000.00	-	-	-	-	-	-
47,382.80	-	-	-	-	-	-
-	-	-	-	-	-	-
$13,886,123.25	$3,879,739.03	$ -	$993,418.99	$4,873,158.02	$6,405,182.91	$11,278,340.93
$ 1,717,882.32	$1,694,458.31	$ -	$ 19,807.16	$1,673,965.47	$ 77,079.28	$ 1,751,044.75
890,200.00	-	-	-	-	-	-
$ 2,607,782.32	$1,694,458.31	$ -	$ 19,807.16	$1,673,965.47	$ 77,079.28	$ 1,751,044.75
$11,278,340.93	$2,225,280.72	$ -	$973,611.83	$3,199,192.55	$6,328,103.63	$ 9,527,296.18

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT OF REVENUES AND EXPENSES - GAS DEPARTMENT

FOR THE YEARS ENDED DECEMBER 31, 1942 AND 1943

Particulars	Year Ended December 31, 1942				Year Ended December 31, 1943				
	United Fuel Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated	United Fuel Gas Company	*arfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated
GROSS EARNINGS:									
Revenues from Sale of Gas-									
Retail Service-									
Domestic	$1,667,759.34	$ -	$ -	$1,667,759.34	$1,830,489.72	$145,300.37	$ -	$ -	$1,975,790.09
Industrial	1,685,311.22	-	-	1,685,311.22	1,575,203.95	214,140.82	-	-	1,789,344.77
Field	58,715.52	-	-	58,715.52	70,683.15	-	-	-	70,683.15
Total Retail Services	$3,411,786.08	$ -	$ -	$3,411,786.08	$3,476,376.82	$359,441.19	$ -	$ -	$3,835,816.01
Wholesale Service-									
Columbia Gas and Electric Company	$ 696,376.83	$ -	$ -	$ 696,376.83	$ 734,196.34	$ -	$ -	$ -	$ 734,196.34
Ohio Fuel Supply Company	548,890.44	-	-	548,890.44	547,904.35	-	-	-	547,904.35
Central Kentucky Natural Gas Company	280,246.58	-	-	280,246.58	307,116.60	-	-	-	307,116.60
Louisville Gas and Electric Company	356,703.95	-	-	356,703.95	224,742.10	-	-	-	224,742.10
Portsmouth Gas Company	357,363.60	-	-	357,363.60	383,322.60	-	-	-	383,322.60
Hope Natural Gas Company	596,304.68	-	-	596,304.68	862,356.64	-	-	-	862,356.64
Pittsburgh and West Virginia Gas Company	954,245.70	-	-	954,245.70	785,890.34	-	-	-	785,890.34
Inter-Company Sales	-	46,083.38	X46,083.38	-	349,126.80	127,621.84	38,325.97	X515,074.61	-
All Others	25,172.00	-	-	25,172.00	17,474.58	-	-	-	17,474.58
Total Wholesale Service	$3,795,303.75	$46,083.38	X46,083.38	$3,795,303.75	$4,212,130.35	$127,621.84	$38,325.97	X515,074.61	$3,863,003.55
Total Revenues from Sale of Gas	$7,207,089.83	$46,083.38	X46,083.38	$7,207,089.83	$7,688,507.17	$487,063.03	$38,325.97	X515,074.61	$7,698,821.56
Miscellaneous Gas Revenues	10,347.11	-	-	10,347.11	14,594.13	213.14	1,174.29	-	15,981.56
Total Operating Revenues	$7,217,436.94	$46,083.38	X46,083.38	$7,217,436.94	$7,703,101.30	$487,276.17	$39,500.26	X515,074.61	$7,714,803.12
Non-Operating Revenues	12,987.66	464.41	X1,800.00	11,652.07	16,348.69	431.51	393.08	X1,800.00	15,373.28
Total Gross Earnings	$7,230,424.60	$46,547.79	X47,883.38	$7,229,089.01	$7,719,449.99	$487,707.68	$39,893.34	X516,874.61	$7,730,176.40
OPERATING EXPENSES AND ORDINARY TAXES:									
Gas Purchased	$ 602,493.76	$ -	X46,083.38	$ 556,410.38	$ 751,145.36	$363,192.94	$ -	X515,074.61	$ 619,263.69
Production Expense-									
Operation-									
Superintendence	$ 13,143.06	$ 13.79	$ -	$ 13,156.85	$ 7,057.84	$ 299.31	$ -	$ -	$ 7,357.15
Operating Wells and Lines	113,943.94	3,367.72	-	117,311.66	109,176.59	2,479.63	2,448.79	-	114,104.41
Production Tools and Supplies	9,716.27	18.70	-	9,736.97	9,039.99	-	11.45	-	9,051.44
Field Measuring Stations	16,939.58	183.67	-	17,123.25	16,992.41	236.15	195.55	-	17,423.91
Leasehold Expenses	46,736.39	-	-	46,736.39	47,837.39	804.56	-	-	48,641.95
Rental on Unoperated Leases	641,135.25	-	-	641,135.25	606,812.27	21,711.12	-	-	628,523.39
Wells Royalties	175,188.58	6,583.36	-	181,771.94	184,346.68	2,836.24	5,043.84	-	192,226.76
Cancelled and Surrendered Leases	1,009.93	-	-	1,009.93	229.97	3.25	-	-	233.22
Miscellaneous and Insurance	29,211.48	73.99	-	29,285.27	50,022.53	56.56	66.71	-	50,145.82
Total Operation	$1,047,026.28	$10,241.23	$ -	$1,057,267.51	$1,031,117.57	$ 28,504.04	$ 7,765.34	$ -	$1,066,384.95

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Particulars	Year Ended December 31, 1922				Year Ended December 31, 1923				
	United Fuel Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated
OPERATING EXPENSES AND ORDINARY TAXES (Cont'd):									
Production Expense (Cont'd)-									
Maintenance-									
Changing Construction	$ 14,351.01	$ 1,232.70	$ -	$ 15,583.71	$ 9,299.59	$ 65.12	$ 88.42	$ -	$ 9,473.13
Repairs to Wells	111,730.65	1,066.91	-	112,797.26	116,698.35	4,440.08	266.07	-	121,404.50
Repairs to Field Lines	18,394.41	771.54	-	19,165.95	23,085.85	792.59	268.89	-	24,147.33
Field Measuring Stations	5,904.42	-	-	5,904.42	4,079.14	105.42	78.20	-	4,262.76
Total Maintenance	$ 146,380.49	$ 3,071.05	$ -	$ 149,451.34	$ 153,162.93	$ 5,423.21	$ 701.58	$ -	$ 159,287.72
Total Production Expense	$1,193,466.57	$13,316.48	$ -	$1,206,718.85	$1,185,280.80	$ 33,927.25	$ 8,464.92	$ -	$1,227,672.67
Transmission-									
Operation-									
Superintendence	$ 4,916.22	$ -	$ -	$ 4,916.22	$ 4,660.54	$ 11.95	$ -	$ -	$ 4,672.49
Transmission Lines	32,107.23	-	-	32,107.23	31,344.51	1,398.74	-	-	32,743.25
Transmission Tools and Supplies	1,772.94	-	-	1,772.94	2,858.01	20.20	-	-	2,878.21
Compressing Stations	345,685.81	5,270.61	-	350,956.42	370,951.61	2,742.00	7,998.09	-	381,691.70
Measuring Stations	8,937.49	-	-	8,937.49	9,429.47	190.22	-	-	9,619.69
Miscellaneous and Insurance	1,544.31	-	-	1,544.31	9,400.08	-	-	-	9,400.08
Total Operation	$ 394,964.00	$ 5,270.61	$ -	$ 400,234.61	$ 428,624.22	$ 4,363.11	$ 7,998.09	$ -	$ 440,965.42
Maintenance-									
Changing Construction	$ 5,332.68	$ -	$ -	$ 5,332.68	$ 6,563.71	$ 2,156.19	$ -	$ -	$ 8,719.90
Transmission Lines	44,863.92	-	-	44,863.92	42,021.74	1,754.96	-	-	43,776.70
Compressing Stations	111,804.53	1,563.04	-	113,367.57	98,351.63	2,445.96	3,915.81	-	104,913.40
Measuring Stations	1,554.96	-	-	1,554.96	1,558.96	149.82	-	-	1,708.78
Total Maintenance	$ 163,554.09	$ 1,563.04	$ -	$ 165,117.13	$ 148,496.04	$ 6,506.93	$ 3,915.81	$ -	$ 159,118.78
Total Transmission	$ 558,536.09	$ 6,733.65	$ -	$ 565,269.74	$ 577,320.26	$ 10,850.04	$11,913.90	$ -	$ 600,084.20
Distribution-									
Operation-									
Superintendence	$ 4,274.92	$ -	$ -	$ 4,274.92	$ 3,778.30	$ 507.33	$ -	$ -	$ 4,285.63
Operating Lines	22,387.41	-	-	22,387.41	24,201.21	1,304.87	-	-	25,506.08
Connecting and Disconnecting Meters	30,915.13	-	-	30,915.13	27,965.79	3,303.09	-	-	31,268.88
Electrolysis	109.38	-	-	109.38	16.29	-	-	-	16.29
Shop Expense	6,763.80	-	-	6,763.80	7,741.76	401.74	-	-	8,143.50
Miscellaneous and Insurance	1,984.96	-	-	1,984.96	2,869.48	32.90	-	-	2,902.38
Total Operation	$ 66,615.60	$ -	$ -	$ 66,615.60	$ 66,552.83	$ 5,569.93	$ -	$ -	$ 72,122.76
Maintenance-									
Changing Construction	$ 28,426.08	$ -	$ -	$ 28,426.08	$ 20,355.62	$ 4,816.08	$ -	$ -	$ 25,171.70
Lines and Regulators	9,916.92	-	-	9,916.92	18,753.93	2,016.98	-	-	20,770.91
Meter and House Regulators	21,858.76	-	-	21,858.76	21,172.69	2,116.02	-	-	23,288.71
Services	12,605.70	-	-	12,605.70	15,496.73	2,343.30	-	-	17,840.03
Total Maintenance	$ 72,807.46	$ -	$ -	$ 72,807.46	$ 75,778.97	$ 11,292.38	$ -	$ -	$ 87,071.35
Total Distribution	$ 139,423.06	$ -	$ -	$ 139,423.06	$ 142,331.80	$ 16,862.31	$ -	$ -	$ 159,194.11

Particulars	Year Ended December 31, 1924				Year Ended December 31, 1923				
	United Fuel Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated
OPERATING EXPENSES AND ORDINARY TAXES (Cont'd):									
Commercial-									
Reading Meters	$ 22,679.56	$ -	$ -	$ 22,679.56	$ 20,529.34	$ 1,698.39	$ -	$ -	$ 22,227.73
Salaries of Office Force and Collectors	74,286.68	-	-	74,286.68	76,270.94	6,230.63	-	-	82,501.57
Rents, Heat, Light, Telephone Rentals and Tolls	9,351.97	-	-	9,351.97	8,823.40	935.59	-	-	9,758.99
Stationery and Supplies	6,546.50	-	-	6,546.50	6,892.75	656.04	-	-	7,548.79
Miscellaneous and Insurance	157.23	-	-	157.23	165.31	37.80	-	-	203.11
Total Commercial	$ 113,021.94	$ -	$ -	$ 113,021.94	$ 112,681.74	$ 9,558.45	$ -	$ -	$ 122,240.19
General and Inter-Departmental Expense-									
General Expense-									
Salaries and Expense of General Officers	$ 66,568.57	$ 486.14	900.00	$ 66,148.71	$ 73,707.68	$ 2,159.87	$ 328.68	X $ 900.00	$ 75,296.23
General Office Expense	67,478.48	397.95	X 540.00	67,334.43	71,977.14	2,224.45	203.64	X 540.00	73,865.23
Private Telegraph and Telephone Lines	16,385.69	-	-	16,385.69	19,080.02	1,459.64	-	-	20,539.66
Legal Expense	40,351.41	-	-	40,351.41	65,653.98	3,028.94	-	-	68,682.92
Insurance	5,483.05	73.86	-	5,556.91	8,561.42	125.38	23.49	-	8,710.29
Damages (Judgments and General Damage Claims)	8,703.80	-	-	8,703.80	3,921.86	32.34	-	-	3,953.90
Relief and Annuities	10,711.63	-	-	10,711.63	7,918.05	11.00	34.99	-	7,964.04
Miscellaneous	60,433.41	120.16	-	60,553.57	82,629.26	2,403.84	-	-	85,033.10
Outside Operations	5,156.46	-	-	5,156.46	5,430.37	353.06	-	-	5,783.43
Bad Debts	781.60	-	-	781.60	433.66	163.21	-	-	596.87
Total General Expense	$ 281,846.10	$ 1,078.11	X $ 1,440.00	$ 281,484.21	$ 339,313.14	$ 11,961.73	$ 890.80	X $ 1,440.00	$ 350,425.67
Inter-Departmental-									
Gas Used by Company- Credit	X $ 143,133.45	$ 77.16	$ -	X 143,210.61	X 143,760.04	X $ 266.50	$ -	$ -	X $ 144,026.54
Cleaning Out Tools	2,894.28	-	-	2,894.28	X 1,440.34	-	-	-	X 4,334.62
Company Teaming	1,881.39	-	-	1,881.39	2,250.87	-	-	-	2,250.87
Rents and Repairs to Buildings	1,448.55	237.00	X 360.00	1,325.55	2,683.44	X 3.81	323.68	X 360.00	2,642.31
Cleaning Out Tools- Oil	X 664.67	X 104.17	-	X 768.24	-	-	-	-	-
Machine and Blacksmith Shop	112.84	-	-	112.84	1,049.19	-	-	-	1,049.19
Yard Water Station	-	X 68.35	-	X 68.35	-	-	-	-	-
Total Inter-Departmental	X $ 137,211.66	$ 12.68	$ 360.00	X 137,384.34	X 143,221.92	X 270.31	$ 323.68	X $ 360.00	X $ 142,529.53
Total General and Inter-Departmental Expense	$ 143,634.44	$ 1,065.43	$ 1,800.00	$ 144,099.87	$ 197,091.22	$ 11,691.42	$ 913.48	X $ 1,800.00	$ 207,896.12
Total Above Items	$2,751,718.86	$21,111.36	X $47,683.36	$2,724,943.84	$2,965,850.86	$466,082.41	$21,292.30	X $516,274.61	$2,936,350.98
Taxes (Other than Income and Excess Profits Taxes)	574,933.33	4,446.35	-	577,379.68	484,085.68	271.02	1,749.00	-	486,105.70
Total Operating Expenses and Ordinary Taxes	$3,324,649.19	$25,557.71	X $47,683.36	$3,302,323.52	$3,449,936.56	$466,353.43	$23,041.30	X $516,274.61	$3,422,456.68
Net Earnings before Federal Taxes, Depletion and Depreciation	$3,905,375.41	$20,790.00	$ -	$3,926,165.49	$4,269,513.43	$ 21,384.28	$16,852.04	$ -	$4,307,719.72

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113
1376

Particulars	Year Ended December 31, 1922				Year Ended December 31, 1923				
	United Fuel Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated
SUMMARY OF REVENUES AND EXPENSES									
GROSS EARNINGS:									
Revenues from Sale of Gas	$7,207,089.83	$46,083.38	X$46,083.38	$7,207,089.83	$7,688,807.17	$487,063.03	$38,328.97 X	$515,074.61	$7,698,821.56
Miscellaneous Gas Revenues	10,347.11	-	-	10,347.11	14,394.13	213.14	1,174.29	-	15,981.56
Non-Operating Revenues	12,587.66	264.41	X1,800.00	11,052.07	16,348.69	431.81	393.08	X1,800.00	15,373.28
Total Gross Earnings	$7,230,024.60	$46,347.79	X47,883.38	$7,228,489.01	$7,719,449.99	$487,707.68	$39,893.34 X	$516,874.61	$7,730,176.40
OPERATING EXPENSES AND ORDINARY TAXES:									
Operation	$2,368,974.02	$16,477.27	X47,883.38	$2,337,567.91	$2,588,212.94	$442,859.89	$16,674.91 X	$516,874.61	$2,530,873.13
Maintenance	382,741.84	4,634.09	-	387,375.93	377,637.94	23,222.52	4,617.39	-	405,477.85
Taxes (Other than Income and Excess Profits Taxes)	574,933.33	4,446.35	-	577,379.68	484,085.68	271.02	1,749.00	-	486,105.70
Total Operating Expenses and Ordinary Taxes	$3,324,649.19	$25,557.71	X47,883.38	$3,302,323.52	$3,449,936.56	$466,353.43	$23,041.30 X	$516,874.61	$3,422,456.68
Net Earnings before Federal Taxes, Depletion and Depreciation	$3,905,375.41	$20,790.08	$ -	$3,926,165.49	$4,269,513.43	$ 21,354.28	$16,852.04	$ -	$4,307,719.72

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1846

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF REVENUES AND EXPENSES - GASOLINE DEPARTMENT

Particulars	Year Ended December 31, 1922						Year Ended December 31, 1923			
	United Fuel Gas Company Four Months Ended May 31, 1922	Virginian Gasoline and Oil Company Eight Months Ended Dec. 31, 1922	Eliminations	Total Year	Cabin Creek Gas Company	Consolidated	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Eliminations	Consolidated
GROSS EARNINGS	$1,209,610.93	$1,826,832.00 X4	$ 4,388.80	$3,032,087.05	$21,243.28	$3,053,300.33	$2,964,044.10	$49,816.42	$ -	$3,013,860.53
OPERATING EXPENSES AND ORDINARY TAXES:										
Direct Expenses-										
Labor - Teaming	$ 51,004.87	$ 105,362.28	$ -	$ 156,367.15	$ 2,457.06	$ 158,824.21	$ 167,287.46	$ 6,892.37	$ -	$ 174,179.83
Fuel	20,347.98	44,761.21	-	65,108.99	-	65,108.99	61,880.14	-	-	61,880.14
Mineral Seal Oil	11,582.42	15,154.91	-	26,736.33	158.87	26,894.20	26,620.26	86.22	-	26,706.48
Repairs - Labor	11,319.90	17,439.73	-	28,759.63	90.63	28,850.26	21,125.19	629.50	-	21,754.69
Repairs - Material	9,186.56	6,879.90	-	16,066.46	20.37	16,086.83	15,933.03	383.70	-	16,316.73
Other Supplies	5,354.90	11,820.10	-	17,175.00	357.40	17,532.40	19,182.49	616.68	-	19,799.17
Freight on Gasoline	-	-	-	-	-	-	341,394.65	6,001.37	-	347,396.02
Royalty	48,335.86	197,684.01	X195,532.85	50,457.02	-	50,457.02	371,377.85	6,196.53	X367,941.70	9,631.68
Rent and Interest	7,602.78	13,703.07	-	21,305.85	-	21,305.85	23,103.26	-	-	23,103.26
Insurance	4,130.79	8,574.51	-	12,705.30	146.20	12,851.50	10,751.16	308.06	-	11,059.22
Use of Gas	11,075.66	17,840.42	-	28,916.28	-	28,916.28	24,031.69	-	-	24,031.69
Total Direct Expenses	$ 179,942.42	$ 439,190.14	X$195,532.85	$ 423,600.01	$ 3,227.52	$ 426,827.54	$1,082,677.18	$21,118.43	X$367,941.70	$ 735,848.91
General Expenses	5,609.49	39,539.58	-	45,145.07	1,162.43	46,307.50	67,880.15	2,757.27	-	70,637.42
Total Above Expense Items	$ 185,547.91	$ 478,729.72	X$195,532.85	$ 468,745.08	$ 4,389.96	$ 473,135.04	$1,150,557.33	$23,870.70	X$367,941.70	$ 806,486.33
Taxes (Other than Income and Excess Profits Taxes)	24,678.11	5,218.94	-	29,897.05	-	29,897.05	40,537.29	-	-	40,537.29
Total Operating Expenses and Taxes	$ 210,226.02	$ 483,948.66	X$195,532.85	$ 498,642.13	$ 4,389.96	$ 503,032.09	$1,191,094.62	$23,870.70	X$367,941.70	$ 847,023.62
Net Earnings before Federal Taxes, Depletion and Depreciation	$ 999,384.91	$1,342,883.34	$191,144.67	$2,533,414.92	$16,853.32	$2,550,268.24	$1,772,949.48	$25,945.72	$367,941.70	$2,166,836.91

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UNITED FUEL GAS COMPANY AND SUBSIDIARIES

DISTRIBUTION OF GAS REVENUES AND SALES IN M. CU. FT. BY

RETAIL DISTRICTS AND WHOLESALE CONSUMERS

FOR THE YEARS ENDED DECEMBER 31, 1928 AND 1923

Particulars	Year Ended December 31, 1928			Year Ended December 31, 1923		
	M. Cu. Ft.	Revenue in Cents Per M. Cu. Ft.	Amount	M. Cu. Ft.	Revenue in Cents Per M. Cu. Ft.	Amount
RETAIL SALES:						
City Sales West Virginia Division-						
City of Charleston-						
Domestic	2,898,913	20.18	$ 824,628.83	2,917,068	20.38	$ 894,420.00
Industrial	2,627,331	17.18	450,587.72	2,862,668	18.04	516,499.16
Total City of Charleston	5,226,244	18.66	$ 975,216.25	5,779,733	19.22	$1,110,919.16
City of Huntington-						
Domestic	1,412,083	21.32	$ 301,099.38	1,630,181	21.38	$ 350,424.63
Industrial	468,371	20.22	94,723.11	973,995	20.18	196,523.63
Total City of Huntington	1,880,424	21.08	$ 395,822.49	2,613,146	20.93	$ 546,948.26
City of Williamson-						
Domestic	234,242	28.48	$ 66,688.28	284,909	28.40	$ 72,370.94
Industrial	79,724	15.78	12,580.44	86,373	15.94	9,306.45
Total City of Williamson	313,966	23.00	$ 72,208.69	343,282	23.79	$ 81,677.39
City of Spencer-						
Domestic	193,188	22.12	$ 42,728.28	199,004	22.17	$ 44,120.28
Industrial	13,871	21.68	3,036.88	13,388	22.12	2,953.90
Total City of Spencer	207,036	22.11	$ 45,763.83	212,380	22.17	$ 47,074.18
Sundry West Virginia Towns-						
Domestic	650,348	23.21	$ 152,907.01	771,812	23.67	$ 181,809.29
Industrial	1,010,720	19.70	199,097.64	873,216	20.58	179,673.93
Total Sundry W. Va. Towns	1,661,068	21.19	$ 352,004.65	1,644,728	22.17	$ 361,483.22
Total City Sales, West Virginia Division-						
Domestic	5,068,708	21.24	$1,081,048.42	5,811,644	21.39	$1,243,148.14
Industrial	4,200,017	18.10	759,964.49	4,781,604	18.93	904,957.07
Total City Sales West Virginia Division	9,268,725	19.82	$1,841,012.91	10,593,248	20.27	$2,148,102.21
OTHER RETAIL SALES:						
Ohio Division	2,192,886	30.19	$ 661,989.46	1,888,684	34.94	$ 644,648.58
Kentucky Division	1,389,993	31.83	498,067.90	1,978,718	31.06	613,614.78
Rural Districts	1,234,822	28.76	355,030.29	1,904,840	28.78	486,772.38
Field Operations	887,182	10.00	88,718.82	706,831	10.00	70,683.18
Total Other Retail Sales	5,804,183	28.13	$1,870,773.17	6,836,040	28.92	$1,687,718.80
Total Retail Sales	14,972,918	22.94	$3,411,786.08	16,429,288	23.38	$3,836,818.01

Particulars	Year Ended December 31, 1922			Year Ended December 31, 1923		
	M. Cu. Ft.	Revenue in Cents Per M. Cu. Ft.	Amount	M. Cu. Ft.	Revenue in Cents Per M. Cu. Ft.	Amount
WHOLESALE SALES:						
Columbia Gas and Electric Company	9,412,164	7.40	$ 696,376.83	9,735,968	7.50	$ 734,196.34
Ohio Fuel Supply Company	7,841,268	7.00	548,890.44	7,829,208	7.00	547,904.36
Central Kentucky Natural Gas Company	1,801,323	19.35	360,246.58	1,535,853	20.00	307,116.60
Louisville Gas & Electric Company	2,270,388	14.71	334,703.98	1,027,321	21.88	224,742.10
Portsmouth Gas Company	1,191,212	30.00	357,363.60	1,277,742	30.00	383,322.60
Hope Natural Gas Company	3,841,636	15.88	596,304.68	4,416,703	19.52	862,386.64
Pittsburgh and West Virginia Natural Gas Company	5,772,484	16.83	954,348.70	4,038,135	19.37	785,860.34
Montgomery Gas Company	97,605	12.00	11,712.60	139,614	12.00	16,753.68
Bow Hill Consumers Gas Company	3,004	25.00	751.00	6,819	25.00	1,704.80
No. W. Virginia Oil and Gas Company				1,082	20.00	216.40
Industrial Gas Company	63,342	20.08	12,708.40			
Total Wholesale	31,994,865	11.86	$3,795,303.78	30,066,171	12.85	$3,863,003.55
T o t a l	46,867,511	15.38	$7,207,089.83	46,498,480	16.86	$7,698,821.86

1849

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAIL OF PLANT AND PROPERTY BY SYSTEMS AND STATES - GAS DEPT.

AS OF DECEMBER 31, 1923

Line No.	Particulars	West Virginia				Kentucky and Ohio			
		Production	Transmission	Distribution	Total	Production	Transmission	Distribution	
1	Pipe Line	$ 1,479,745.24	2,934,621.83	470,157.61	4,884,524.68	75,582.35	744,101.42	180,782.93	1,00
2	Well Pipe	1,306,977.97	-	-	1,306,977.97	54,943.59	-	-	
3	Well Equipment	3,648,762.02	-	-	3,648,762.02	139,245.99	-	-	12
4	Operated Acreage	2,005,555.23	-	-	2,005,555.23	3,641.91	-	-	
5	Unoperated Acreage	4,884,608.61	-	-	4,884,608.61	38,910.53	-	-	
6	Right of Way	38,467.31	56,951.54	1,898.36	97,317.21	1,730.20	20,205.10	566.00	
7	Right of Way Expense	42,382.07	56,332.32	3,429.12	102,143.51	5,139.11	13,181.55	756.32	
8	Buildings	65,956.03	140,331.99	104,788.51	311,075.53	3,108.86	7,642.06	6,657.77	
9	Fittings	82,792.60	41,493.63	38,161.72	162,449.18	4,571.47	18,147.02	14,837.01	
10	Other Line Equipment	49,051.68	35,821.95	17,432.21	102,305.81	1,629.88	6,478.11	6,024.96	
11	Labor, Teaming and Freight	980,412.71	1,859,668.60	328,094.82	3,168,176.13	44,761.21	380,376.86	112,137.23	92
12	Regulators	1,827.58	1,796.89	17,788.41	21,422.88	-	1,647.20	7,182.43	
13	Telephone and Telegraph Lines	-	101,182.10	-	101,182.10	-	10,742.66	-	
14	Office Furniture	3,490.52	588.00	32,934.89	37,013.41	119.20	-	5,156.51	
15	Tools Over $25.00	6,647.48	646.92	7,368.98	14,663.38	49.00	-	2,504.99	
16	Meters	10,602.48	9,269.43	333,433.31	353,305.22	864.61	2,113.26	143,846.87	14
17	Compressor Stations	48,475.35	2,735,005.79	-	2,783,481.14	-	104,960.48	-	12
18	Measuring Stations	50,947.59	33,484.99	15,516.67	99,949.25	1,985.14	4,920.34	11,560.65	1
19	Service Lines	-	-	242,947.26	242,947.26	-	-	87,616.46	
20	Autos, Horses and Wagons	21,543.32	1,725.20	13,505.35	36,773.87	-	-	1,744.65	
21	Drilling Tools	67,821.05	-	-	67,821.05	3,804.40	-	-	
22	Cost of Financing	-	-	-	-	-	-	-	
23	Cleaning Out Tools	50,391.82	-	-	50,391.82	-	-	-	
24	Depreciation and Adjustment	689,796.43	X-227.52	887.09	690,456.00	65,618.65	27.49	529.04	
25									
26									
27									
28	Total Plant, Property, Etc.	$15,336,266.06	8,008,698.86	1,628,311.33	24,973,272.25	446,110.07	1,314,743.52	581,576.62	2,3
29									
30									

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/ES)DIARIES

ATES - GAS DEPARTMENT

and Ohio			Total					Line
Distribution	Total	General and Miscellaneous	Production	Transmission	Distribution	General and Miscellaneous	Total	No.
160,782.93	1,000,467.70	-	1,656,327.69	3,678,722.25	650,941.54	-	5,984,992.38	1
-	54,943.59	-	1,361,921.56	-	-	-	1,361,921.56	2
-	139,245.99	-	3,788,008.01	-	-	-	3,788,008.01	3
-	3,841.91	-	2,009,395.14	-	-	-	2,009,395.14	4
-	38,916.83	-	4,723,825.14	-	-	-	4,723,825.14	5
866.00	22,501.30	-	40,197.61	77,156.64	3,464.36	-	119,818.61	6
756.32	19,076.98	-	47,521.18	69,513.87	4,186.44	-	121,221.49	7
6,657.77	17,606.69	-	69,066.89	146,174.05	111,443.28	-	326,684.22	8
14,837.01	37,558.80	-	87,365.07	59,640.85	52,998.73	-	200,004.65	9
6,024.96	14,332.92	-	50,881.80	42,800.06	23,457.17	-	116,038.73	10
112,137.23	537,275.30	-	1,028,172.92	2,840,045.46	440,252.08	-	3,708,451.43	11
7,182.43	8,799.83	-	1,837.56	3,444.09	24,940.64	-	30,222.61	12
-	10,742.66	-	-	111,924.76	-	-	111,924.76	13
5,156.51	5,277.71	365.80	3,609.72	365.00	38,093.40	365.80	42,696.92	14
2,804.99	2,853.99	-	6,696.48	348.92	9,873.97	-	17,219.37	15
143,846.87	146,824.74	-	11,467.09	11,362.69	476,980.18	-	499,829.96	16
-	104,960.45	-	48,476.35	2,839,966.24	-	-	2,888,441.59	17
11,860.65	18,464.13	-	55,349.77	36,086.29	27,077.32	-	118,413.38	18
87,616.46	87,616.46	-	-	-	330,563.74	-	330,563.74	19
1,744.65	1,744.65	-	21,843.32	1,725.20	15,250.00	-	38,818.52	20
-	3,804.40	-	71,625.45	-	-	-	71,625.45	21
-	-	195,727.58	-	-	-	195,727.58	195,727.58	22
-	-	-	50,291.82	-	-	-	50,291.82	23
829.04	66,175.18	-	785,415.08	(200.03	1,386.13	-	786,601.18	24
								25
								26
								27
581,576.62	2,342,430.41	196,093.38	18,784,695.17	9,321,120.34	2,309,888.18	196,093.38	27,811,797.04	28
								29
								30

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAILS OF GAS PURCHASES

FOR THE YEARS ENDED DECEMBER 31, 1932, AND 1933

Participants	Year Ended December 31, 1932			Year Ended December 31, 1933		
	M. Cubic Feet	Rate per M. Cubic Feet in Cents	Amount	M. Cubic Feet	Rate per M. Cubic Feet in Cents	Amount
UNITED FUEL GAS COMPANY:						
Anderson Oil and Gas Company	82,984	5.00	$ 4,199.20	64,348	5.00	$ 3,217.28
Belvard Oil and Gas Company	238,693	5.00	11,784.65	206,489	5.00	10,324.45
Blackshire Oil and Gas Company	160,441	7.00	11,230.87	148,383	7.45	11,046.72
W. E. R. Byrne	32,257	2.25	725.83	25,656	2.25	577.35
Cabin Creek Gas Company	1,316,667	3.50	46,083.36	1,008,761	3.50	35,325.97
Carter Oil Company	104,754	3.25	3,439.73	79,954	3.22	2,571.01
Cassis and Kemp	27,417	5.00	1,370.86	17,857	5.00	892.85
Central Wayne Oil and Gas Company	97,855	5.00	4,892.75	96,390	5.00	4,819.50
Charleston and Clendenin Oil and Gas Company	118,632	6.24	7,403.39	122,163	7.00	8,551.41
Columbian Carbon Company	27,092	4.00	1,083.68	20,719	4.00	828.76
Clendenin Gasoline Station	57,138	4.00	2,288.52	-	-	-
Davis, L. G.	-	-	-	370,179	6.41	23,738.10
East Lynn Oil and Gas Company	57,583	5.00	2,879.18	48,117	5.00	2,405.85
Empire Petroleum Company	897,258	4.89	43,896.35	744,344	5.00	37,227.20
Elkins, Richard	893,383	7.56	67,821.36	819,198	8.48	69,231.34
Falling Rock Cannell Coal Company	619,238	8.50	52,635.26	985,757	8.50	83,789.37
Frazier, J. E.	449,256	5.00	22,262.90	425,084	8.48	35,147.44
Gascoal Oil Company	352,298	5.00	10,668.94	339,507	5.00	16,186.21
J. O. Jackson Company	298,144	3.00	8,854.32	234,769	3.00	7,043.07
Kanawha City Oil and Gas Company	725,829	8.00	57,906.32	807,282	8.08	65,862.36
Koontz and Osborne #116	2,641	5.00	132.05	-	-	-
Latty Oil and Gas Company	201,946	4.52	9,122.46	-	-	-
Meteor Carbon Company	167,093	5.00	8,354.65	137,276	5.00	6,863.80
Murphy, John	41,333	4.82	1,992.26	19,179	6.00	1,150.74
McCormick, William	45,382	6.00	2,734.92	47,251	6.40	3,024.45
McCray, D. D.	4,101	4.07	167.00	2,583	5.00	129.65
Ohio Fuel Oil Company	937,685	5.32	49,889.83	999,186	7.08	69,940.92
O'Connell Oil Company #4	143,467	5.00	7,173.42	-	-	-
O'Connell Oil Company #91	261,922	5.00	13,096.14	87,896	5.38	4,740.06
Pilgrim Oil Company	79,202	6.00	4,752.12	42,626	6.00	2,557.56
Priddie Oil and Gas Company	77,537	5.00	3,876.85	76,808	5.00	3,840.40
Rogers, A. M.	4,981	5.00	249.05	5,072	5.00	253.60
Shelton Gasoline Company	147,448	5.00	7,372.40	318,886	5.00	15,944.30
Smiley and Shaff	142,715	5.00	7,135.75	106,633	5.00	5,331.65
Allman, Peter	75,738	4.30	3,258.51	59,503	4.48	2,664.95
South Penn Oil Company	527,116	3.31	17,447.56	166,080	3.68	6,110.35
Stonewall Oil and Gas Company	68,280	5.00	3,412.50	83,134	5.00	2,657.70

Particulars	Year Ended December 31, 1922			Year Ended December 31, 1923		
	M. Cubic Feet	Rate per M. Cubic Feet In Cents	Amount	M. Cubic Feet	Rate per M. Cubic Feet In Cents	Amount
UNITED FUEL GAS COMPANY (Continued):						
Pennsylvania Oil and Gas Company	495,950	6.28	$ 31,130.66	494,870	7.64	$ 37,791.90
Turley, C. J.	89,082	4.00	3,562.08	46,400	4.00	1,856.01
Union Gas and Oil Company	464,296	6.36	29,546.78	198,503	6.34	12,584.57
Virginian Gas and Oil Company	-	-	-	1,896	5.00	94.80
Williamson and Carnes	303,768	4.81	14,609.09	208,272	5.63	11,553.79
Warfield Natural Gas Company	-	-	-	667,294	18.57	127,621.64
Walker Oil Company #4	-	-	-	29,391	7.00	2,057.38
Waldron, M. M.	104,126	3.00	3,123.78	114,999	3.00	3,449.97
Waldsmith, Carl J.	80,827	6.00	4,849.62	68,666	6.00	4,119.96
Welsh and Lemon	7,748	6.00	464.76	6,202	6.00	372.12
Western Oil and Gas Company	200,183	7.00	14,012.81	200,886	7.00	14,059.85
Barnhart and Taylor	-	-	-	185,317	7.00	12,972.19
Davis and Davis (Camp Creek)	-	-	-	11,629	10.00	1,162.90
Davis and Davis (H. Samples)	-	-	-	10,892	10.00	1,089.20
Davis and Davenport	-	-	-	11,797	10.00	1,179.70
Miller, Jeff et al.	-	-	-	20,764	7.00	1,453.48
Goshorn, Craig Oil Company	-	-	-	18,247	10.00	1,824.70
Richard Hikins #181	-	-	-	58,086	7.00	4,206.46
Total United Fuel Gas Company	11,220,802	5.37	$602,493.76	10,856,089	6.92	$751,145.36
WARFIELD NATURAL GAS COMPANY:						
Murphy, John	-	-	$ -	19,768	6.00	$ 1,186.80
Pilgrim Oil Company	-	-	-	15,370	6.00	922.20
Union Gas and Oil Company	-	-	-	474,584	6.73	31,956.04
United Fuel Gas Company	-	-	-	1,163,756	30.00	349,126.80
Total Warfield Natural Gas Company	-	-	-	1,673,478	22.96	$383,192.94
Total Purchases	11,220,802	5.37	$602,493.76	12,529,564	9.96	$1,134,338.30
Less- Inter-Company Purchases	1,316,667	3.50	$ 46,083.38	3,659,811	26.61	$973,074.61
Total Consolidated Purchases	9,904,136	5.62	$556,410.38	9,669,753	6.46	$161,263.69

1852

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DISTRIBUTION AND COMMERCIAL EXPENSES BY DISTRICTS

FOR THE YEAR ENDED DECEMBER 31,1952

Particulars	City of Charleston	City of Huntington	City of Williamson	Other West Virginia	Total West Virginia	Ohio and Kentucky Districts	Total Distribution Expenses
DISTRIBUTION:							
Operation-							
Superintendence	$ 883.72	$ 624.80	$ 248.02	$ 898.91	$ 2,355.15	$ 1,930.48	$ 4,285.63
Operating Lines	10,993.08	2,888.04	329.75	8,131.23	19,042.13	6,463.94	25,506.08
Connecting and Disconnecting Meters	9,666.34	3,938.38	843.25	7,668.16	21,946.13	9,722.75	31,668.88
Electrolysis	-	16.29	-	-	16.29	-	16.29
Shop Expense	2,048.28	2,367.36	181.81	984.22	5,581.67	2,640.03	8,143.50
Miscellaneous	1,601.94	786.58	15.87	200.43	2,603.81	498.57	2,902.38
Total Operation	$24,693.36	$10,340.17	$ 1,588.70	$14,274.94	$ 50,966.97	$21,256.79	$ 72,122.76
Maintenance							
Charging Construction	$ 9,469.63	$ 3,819.68	$ 87.80	$ 2,883.38	$ 16,960.19	$ 9,211.51	$ 26,171.70
Lines and Regulators	2,180.49	2,833.89	414.88	4,237.22	9,386.39	11,384.52	20,770.91
Meter and House Regulators	7,992.49	4,667.16	404.96	2,949.64	16-014.25	7,274.46	23,288.71
Services	4,113.68	2,890.97	370.89	1,622.81	8,999.94	8,840.08	17,840.03
Total Maintenance	$23,756.29	$13,211.71	$ 1,278.23	$11,413.05	$ 50,360.78	$36,710.57	$ 87,071.35
Total Distribution	$48,451.65	$24,251.36	$ 2,836.93	$25,687.79	$101,227.75	$57,966.36	$ 159,194.11
COMMERCIAL:							
Reading Meters	$ 5,695.45	$ 3,629.01	$ 387.07	$ 3,636.45	$ 13,347.98	$ 6,879.75	$ 21,227.73
Salaries of Office Force and Collectors	20,367.33	14,874.21	3,686.84	18,183.94	59,111.02	23,390.55	82,501.57
Rent, Heat, Light, Telephone	2,527.01	1,941.43	121.07	1,433.31	6,222.82	3,536.17	9,758.99
Stationery and Supplies	1,790.46	2,156.85	113.52	1,486.78	5,547.61	2,031.18	7,578.79
Miscellaneous	25.91	35.52	17.95	36.47	115.80	87.31	203.11
Total Commercial	$30,406.16	$24,637.02	$ 4,325.15	$24,966.90	$ 84,316.23	$36,924.96	$ 121,240.19
Total Distribution and Commercial	$78,857.81	$48,888.40	$ 7,162.08	$51,654.69	$187,543.98	$93,891.32	$ 281,434.30

1953

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

SUMMARY STATEMENT OF DISTRIBUTION SYSTEM

AS OF DECEMBER 31, 1923

Particulars	Charleston	Huntington	Spencer	Total West Virginia	Ohio	Kentucky	Total Ohio and Kentucky	Total
Pipe Line	$312,953.87	$238,034.91	$19,169.43	$ 470,157.61	$ 87,325.88	$ 93,456.06	$180,783.93	$ 650,941.54
Rights of Way	1,136.90	635.21	106.25	1,898.36	184.00	382.00	566.00	2,464.36
Right of Way Expense	1,108.88	2,294.66	96.16	3,429.12	352.72	403.60	756.32	4,185.44
Buildings	84,810.72	19,333.38	641.41	104,785.51	2,374.65	4,283.12	6,657.77	111,443.28
Fittings	19,032.34	17,863.10	1,266.26	38,161.72	6,008.63	8,630.16	14,637.01	52,998.73
Other Material	10,209.68	6,097.85	1,124.68	17,432.21	2,390.81	3,634.45	6,024.96	23,457.17
Labor, Teaming and Freight	158,612.58	153,864.67	15,617.87	328,094.82	51,675.37	60,461.86	112,137.23	440,232.05
Gas Receivers and Regulators	9,673.02	6,681.00	1,464.30	17,788.41	3,223.08	3,929.35	7,152.43	24,940.84
Office Furniture	27,922.76	4,706.63	805.50	33,934.89	2,034.96	3,123.55	5,158.51	38,093.40
Tools over $25.00	5,640.63	1,118.27	610.06	7,368.98	1,219.57	1,283.42	2,504.99	9,873.97
Meters	164,735.15	155,531.20	13,169.96	333,433.31	65,792.56	77,784.31	143,576.87	476,980.18
Pitot Tube Measuring Stations	10,933.29	4,583.36	-	15,516.67	7,467.63	4,093.62	11,560.65	27,077.32
Service Lines	124,569.42	109,587.68	8,759.96	242,947.28	45,591.11	45,025.35	87,616.46	330,563.74
Horses, Wagons and Automobiles	9,930.35	3,575.00	-	13,505.35	601.63	943.02	1,744.65	15,250.00
Depreciation and Adjustment	370.27	388.52	98.33	857.09	525.08	3.96	529.04	1,386.13
Total Distribution System	$841,685.70	$723,695.75	$62,929.68	$1,628,311.33	$273,965.58	$307,611.24	$581,576.82	$2,209,888.15

1854

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAIL OF CHARLESTON DIVISION DISTRIBUTION SYSTEM

AS OF DECEMBER 31, 1923

Particulars	Charleston Distribution System								Total Charleston Distribution System
	City of Charleston	Louden District	Charleston District	Elk District	South Charleston	Kanawha City	Total	Sundry Districts	
...e Line	$143,813.76	$12,883.48	$18,845.61	$ 94.39	$16,004.90	$ 5,792.03	$197,134.17	$ 15,819.10	$212,953.27
...ts of Way	603.75	36.15	226.00	23.25	-	20.00	909.15	247.75	1,156.90
...ts of Way Expense	675.31	43.25	102.30	60.75	-	7.43	889.04	219.24	1,108.28
...ildings	7,034.32	116.83	212.33	795.77	249.94	109.01	8,508.20	76,302.52	84,810.72
...tings	13,788.30	975.00	905.65	167.52	767.43	489.80	17,093.70	1,938.66	19,032.36
...er Material	8,943.94	271.30	70.47	243.13	1,247.42	371.82	8,148.08	2,061.60	10,209.68
...er, Teaming and Freight	114,409.89	14,454.29	3,509.41	843.74	1,936.77	4,072.87	139,226.97	19,385.61	158,612.58
...Receivers and Regulators	4,277.44	346.12	767.33	394.28	1,276.86	339.37	7,401.40	2,271.62	9,673.02
...ice Furniture	2,165.14	-	-	28.94	-	-	2,194.08	25,728.68	27,922.76
...ls Over $50.00	5,394.40	-	-	-	-	-	5,394.40	246.25	5,640.65
...ers	123,880.10	5,284.44	5,233.53	177.61	7,856.26	3,171.32	144,983.16	19,748.99	164,732.15
...t Tubes Measuring Stations	882.07	2,247.40	1,714.74	-	862.11	-	5,706.32	5,226.97	10,933.29
...vice Lines	103,139.41	2,060.42	2,330.60	21.17	7,262.04	1,210.74	118,024.38	6,575.04	124,599.42
...ses, Wagons and Automobiles	9,910.35	-	-	-	-	-	9,910.35	20.00	9,930.35
...reciation and Adjustment	-	-	-	-	-	-	-	370.27	370.27
T o t a l	$537,298.18	$38,718.69	$33,917.97	$2,840.45	$37,163.73	$15,584.39	$665,523.40	$176,162.30	$841,685.70

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAIL OF HUNTINGTON DIVISION DISTRIBUTION SYSTEM

AS OF DECEMBER 31, 1923

Particulars	Huntington Distribution System								
	City of Huntington Cabell Co.	Guyandotte District	City of Huntington Wayne Co. (Geneva)	Grant and Barboursville	Total Huntington	City of Williamson	Total	Sundry Districts	Total Huntington
Pipe Line	$169,228.57	$ 4,000.60	$17,972.09	$ -	$191,198.26	$11,800.13	$202,998.39	$ 35,036.52	$238,034.91
Rights of way	156.50	2.00	-	-	158.50	94.50	253.00	382.21	635.21
Rights of way Expense	1,301.11	-	-	-	1,301.11	156.60	1,457.71	766.95	2,224.66
Buildings	11,279.32	221.71	30.44	-	11,531.47	6,793.90	18,305.37	1,028.01	19,333.38
Fittings	13,282.62	300.61	172.14	-	13,755.37	675.76	14,431.13	3,431.97	17,863.10
Other Material	3,368.07	182.85	109.56	-	3,657.88	631.28	4,288.86	1,808.99	6,097.85
Labor, Teaming and Freight	103,099.76	3,789.86	6,330.67	6.87	113,406.88	10,988.72	123,995.60	29,869.07	153,364.67
Gas Receivers and Regulators	2,901.50	421.93	183.13	-	3,506.56	874.00	4,380.56	2,270.53	6,651.09
Office Furniture	3,718.24	-	-	-	3,718.24	326.16	4,044.40	162.23	4,206.63
Tools over $50.00	850.86	-	-	-	850.86	-	850.86	267.41	1,118.27
Meters	97,477.18	2,568.86	4,474.38	114.46	104,634.51	18,342.91	122,977.42	32,553.78	155,531.20
Pitot Tubes Measuring Stations	3,278.75	-	-	-	3,278.75	-	3,278.75	1,304.63	4,583.38
Service Lines	80,412.61	1,488.14	2,585.86	49.65	84,497.66	7,775.95	92,273.61	17,314.27	109,587.88
Horses, Wagons and Automobiles	3,575.00	-	-	-	3,575.00	-	3,575.00	-	3,575.00
Depreciation and Adjustment	-	-	-	-	-	-	-	386.52	386.52
Total	$493,824.09	$13,899.94	$32,085.74	$170.98	$539,050.75	$58,059.31	$597,110.66	$126,585.09	$723,695.75

JIRGAL EXHIBIT NO. 6

ITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

ET ON ADJUSTED GAS INVESTMENT, NET EARNINGS,

DEPRECIATION AND OPERATING PROFIT

PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1925

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

ADJUSTED STATEMENT OF PLANT AND PROPERTY - GAS DEPARTMENT

Period	Additions Per Books	Adjustments: *Incomplete Construction	Adjustments: Labor Cost Of Drilling New Wells	Adjustments: Unoperated Oil Acreage	Adjustments: Financing Improvements and Betterments	Adjustments: Depreciation and Adjustment	Adjustments: Total Adjustments	Additions As Adjusted	Balance At End Of Year
Six Months Ended December 31- 1909	$ 148,888.82	$6,227,829.35	$ 9,387.96	X$511,256.17	$ -	$ -	$7,725,931.16	$7,874,819.98	$ 7,874,819.98
Year Ended December 31- 1910	9,739,750.89	X4,617,112.05	347,866.95	-	-	-	X4,269,345.10	5,470,205.79	13,345,025.77
1911	3,042,313.03	X3,981,025.64	493,426.79	-	-	-	X2,787,598.87	254,714.16	13,599,739.93
1912	489,504.72	111,448.65	149,439.93	-	-	-	260,888.58	750,393.30	14,350,133.23
1913	1,013,810.13	72,782.35	418,009.95	-	-	-	490,792.30	1,504,602.43	15,854,435.66
1914	861,424.92	72,983.97	345,762.23	-	-	-	418,746.20	1,280,171.12	17,134,606.78
1915	660,480.50	X516,771.40	-	-	-	-	X516,771.40	143,709.10	17,278,315.88
1916	1,874,276.28	298,743.17	-	-	X118,449.56	X266,453.93	X 86,160.32	1,788,115.93	19,066,431.81
1917	4,031,125.28	303,706.46	X1,763,363.83	X117,047.66	X74,973.88	X489,880.09	X2,141,759.00	1,909,366.28	20,975,798.09
1918	652,792.16	9,872.92	-	-	-	267.16	9,605.76	662,397.92	21,638,196.01
1919	819,486.99	X280,655.01	-	-	X1,250.00	-	X281,905.01	537,561.96	22,175,757.99
1920	1,520,864.05	120,876.43	-	-	-	-	120,876.43	1,645,740.48	23,821,498.47
1921	1,152,846.81	X375,875.99	-	-	-	-	X375,875.99	776,970.82	24,598,469.29
1922	397,609.08	84,973.32	-	238,713.22	-	-	303,686.54	701,295.62	25,299,764.91
1923	1,082,943.41	X 92,742.35	-	-	X 1,054.14	-	X 93,796.49	989,146.92	26,288,911.83
	$27,511,797.04	$ 119,034.16	-	X$389,390.61	X$195,727.58	X$756,601.18	X$1,222,585.21	$26,288,911.83	

* Included with Gas Department Property cost in its entirety, although some part properly chargeable to Gasoline and Oil Departments.

(X Denotes red in copy.)

1858

1144 1859

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT OF ADJUSTED NET EARNINGS BEFORE DEPLETION, DEPRECIATION AND FEDERAL INCOME TAXES - GAS DEPARTMENT

FOR THE PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1923

Period	Per Books	Adjustments: Adjustment of Revenues from Parent Companies	Cost of Drilling New Wells	Abandoned Leases charged to Expense	Production Expenses chargeable to Oil Department	General Expenses apportioned to other Departments	Profit and Loss Adjustments	One-Half Gasoline Net Earnings	Property Taxes apportioned to other Departments	Total Adjustments	Total as Adjusted
Six months Ended December 31, 1909	$ 170,568.68	-	9,387.96	108,883.00	12,054.24	4,409.69	X18,966.60	-	1,812.88	117,551.19	288,119.87
Year Ended December 31-											
1 9 1 0	345,800.50	-	347,866.98	415,436.55	58,904.01	5,866.41	X52,055.44	-	2,181.18	767,899.87	1,113,700.37
1 9 1 1	389,291.65	-	493,426.79	43,516.55	59,138.06	4,148.86	13,912.77	-	2,118.89	616,250.44	905,842.09
1 9 1 2	1,249,603.01	-	149,439.93	21,243.53	59,844.44	14,663.96	14,918.75	-	5,293.13	265,123.74	1,514,726.75
1 9 1 3	881,088.59	-	418,009.98	128,576.55	66,768.66	18,247.00	108,551.19	-	8,539.95	748,695.32	1,629,783.89
1 9 1 4	862,161.06	-	348,768.23	91,632.10	69,226.66	9,818.67	35,202.78	-	7,366.84	549,009.30	1,411,170.36
1 9 1 5	1,388,299.43	-	-	-	73,257.58	9,663.33	X22,640.22	-	9,688.90	69,959.59	1,388,249.01
1 9 1 6	2,389,948.36	-	-	-	73,700.93	18,632.13	170,411.46	127,676.13	15,921.26	406,341.91	2,796,290.21
1 9 1 7	4,748,086.75	-	-	-	75,232.46	47,134.28	X17,079.66	662,446.81	23,106.55	790,840.13	5,538,926.88
1 9 1 8	4,349,076.14	334,843.48	-	-	74,662.11	50,180.97	X80,029.99	791,519.38	37,362.76	1,188,536.70	5,537,615.44
1 9 1 9	5,669,028.90	897,183.78	-	-	81,008.13	50,283.29	X8,534.67	1,103,637.71	52,028.40	1,878,553.44	5,243,579.34
1 9 2 0	4,172,210.45	1,343,636.13	-	-	91,844.10	63,390.78	X97,800.97	1,320,293.00	71,755.34	2,733,118.31	6,905,328.76
1 9 2 1	3,078,401.96	988,685.14	-	-	98,670.84	82,166.46	49,850.78	999,567.22	85,152.86	2,232,113.29	5,310,515.25
1 9 2 2	•3,926,165.49	1,397,956.51	-	-	89,488.91	-	32,038.67	1,101,705.72	6,882.67	2,630,001.48	6,556,166.97
1 9 2 3	4,307,719.78	1,498,496.69	-	-	88,039.31	-	98,387.19	934,393.41	7,207.43	2,617,424.03	6,925,143.78
	$38,717,436.36	$ 6,711,453.69	1,763,543.63	809,310.08	1,064,872.48	348,595.01	233,655.81	7,041,259.08	358,712.76	17,311,420.74	53,028,856.94

•After allocating General Expenses and Taxes between departments for first four months of year.

(X Denotes red in copy.)

1859

MIDLAND FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING AVERAGE INVESTMENT

BEFORE AND AFTER ALLOWING FOR ACCRUED DEPRECIATION AND DEPLETION

FOR THE PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1923

Period	(1) Book Cost of Property at End of Year	(2) Average Investment for Year	(3) Working Capital at 4%	(4) Total Average Investment before Allowing for Accrued Depreciation and Depletion	(5) Accrued Depreciation and Depletion	(6) Cumulative Retirements	(7) Balance in Depreciation and Depletion Reserves	(8) Average Balance in Reserves	(9) Average Investment after Allowing for Accrued Depreciation and Depletion
Six Months Ended December 31, 1909	$ 7,674,619.98	$ 3,937,609.99	$ 157,496.40	$ 4,094,986.39	$ 55,151.30		$ 55,151.30	$ 27,575.65	$ 4,067,330.74
Year Ended December 31-									
1 9 1 0	13,348,085.77	10,609,902.88	424,396.91	11,034,299.79	848,885.61	$ 148,351.61	397,234.20	226,192.75	10,808,107.04
1 9 1 1	13,599,739.93	13,473,912.85	538,995.29	14,011,877.67	1,095,994.75	×536,386.16	559,608.59	478,421.39	13,532,856.28
1 9 1 2	14,350,133.23	13,974,936.58	558,997.46	14,533,934.04	1,717,086.45	×604,564.86	1,112,521.57	836,065.08	13,697,868.96
1 9 1 3	15,654,438.64	15,102,284.45	604,091.38	15,706,375.83	2,416,772.60	×636,697.20	1,780,075.40	1,446,298.48	14,260,087.35
1 9 1 4	17,134,606.78	16,494,521.22	659,780.85	17,154,302.07	3,199,121.11	×803,077.88	2,396,043.23	2,088,059.32	15,066,242.75
1 9 1 5	17,278,315.88	17,206,461.33	688,258.45	17,894,719.78	5,998,744.88	×918,965.80	3,077,679.38	2,736,861.30	15,157,858.48
1 9 1 6	19,066,431.81	18,172,373.85	726,894.98	18,899,268.80	4,999,489.16	×1,200,746.38	5,798,703.78	3,438,191.58	15,461,077.22
1 9 1 7	20,975,798.09	20,021,114.95	800,844.61	20,821,959.86	6,198,050.62	×1,690,893.63	4,501,165.99	4,149,934.89	16,672,024.67
1 9 1 8	21,636,196.01	21,306,997.05	852,279.88	22,159,276.93	7,408,488.18	×1,948,898.03	5,459,564.15	4,980,375.07	17,178,901.86
1 9 1 9	22,175,757.99	21,906,977.00	876,279.08	22,783,256.08	8,616,180.24	×2,140,605.86	6,475,841.88	5,962,862.87	16,820,693.21
1 9 2 0	23,621,495.47	22,998,626.23	919,945.13	23,918,863.36	9,913,383.61	×2,308,880.33	7,604,003.28	7,040,272.38	16,878,290.98
1 9 2 1	24,396,469.29	24,209,983.88	968,399.36	25,178,383.24	11,197,493.02	×2,668,185.48	8,845,307.54	8,075,155.41	17,103,227.83
1 9 2 2	25,299,784.91	24,949,117.10	997,964.68	25,947,081.78	12,849,671.85	×3,833,213.44	9,716,458.41	9,130,882.98	16,816,198.80
1 9 2 3	26,286,911.63	26,794,338.37	1,031,773.53	26,826,111.90	13,948,899.84	×3,980,222.38	10,998,677.02	10,357,567.72	16,468,544.18

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING NET EARNINGS AVAILABLE FOR RETURN ON INVESTMENT

AFTER ALLOWING FOR DEPRECIATION, DEPLETION AND INCOME TAXES

FOR THE PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1923

Period	Net Earnings before Depreciation, Depletion, and Federal Income Taxes	Depreciation and Depletion	Federal Income Taxes	Total Deductions	Earnings Available for Return on Investment
Six Months Ended December 31, 1909	$ 288,119.87	$ 55,151.30		$ 55,151.30	$ 232,968.57
Year ended December 31,-					
1910	1,113,700.37	490,434.51		490,434.51	623,265.86
1911	908,542.09	550,408.94		550,408.94	358,133.15
1912	1,514,726.75	621,091.70		621,091.70	893,635.05
1913	1,629,783.89	699,686.15		699,686.15	930,097.74
1914	1,411,170.36	782,348.51		782,348.51	628,821.85
1915	1,382,249.01	793,623.77		793,623.77	588,625.24
1916	2,796,290.21	1,006,705.28		1,006,705.28	1,789,584.93
1917	5,538,926.88	1,192,609.46	$ 242,920.00	1,435,529.46	4,103,397.42
1918	5,537,615.44	1,213,422.56	152,460.00	1,365,882.56	4,171,732.88
1919	5,293,579.34	1,210,668.06	57,630.00	1,268,298.06	4,025,281.28
1920	6,908,328.76	1,297,173.37	187,240.00	1,484,413.37	5,420,915.39
1921	5,310,518.25	1,284,169.41	63,020.00	1,347,189.41	3,963,328.84
1922	6,588,166.97	1,338,178.83	214,040.00	1,566,218.83	4,989,948.14
1923	6,928,143.78	1,399,227.49	312,346.14	1,711,573.63	5,213,570.12
Total	$83,078,888.94	$13,948,899.34	$1,289,686.14	$15,178,585.48	$67,900,303.46

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING DEVELOPMENT COST COMPUTED AT 8% ON INVESTMENT BEFORE AND AFTER ALLOWING FOR ACCRUED DEPRECIATION AND DEPLETION

FOR THE PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1923

Period	Based on Investment after Allowing for Accrued Depreciation and Depletion				Based on Investment before Allowing for Accrued Depreciation and Depletion			
	(1) Average Investment after Allowing for Accrued Depreciation and Depletion	(2) Return on Investment at 8%	(3) Earnings Available for Return	(4) Surplus or ✕Deficit	(5) Average Investment before Allowing for Accrued Depreciation and Depletion	(6) Return on Investment at 8%	(7) Earnings Available for Return	(8) Surplus or ✕Deficit
Six Months Ended December 31 1909	$ 4,067,331	$ 325,386	$ 232,969	✕$ 92,417	$ 4,094,906	$ 327,592	$ 232,969	✕$ 94,623
Year Ended December 31-								
1910	10,808,137	864,651	623,866	✕241,385	11,024,330	882,746	623,866	✕259,480
1911	13,532,856	1,082,628	355,133	✕727,495	14,011,278	1,120,902	355,133	✕765,769
1912	13,697,879	1,095,830	893,635	✕202,195	14,833,934	1,162,715	893,635	✕269,080
1913	14,260,067	1,140,807	930,098	✕210,709	15,706,376	1,256,510	930,098	✕326,412
1914	15,066,243	1,205,299	628,822	✕576,477	17,184,302	1,372,344	628,822	✕743,522
1915	15,157,856	1,212,629	558,625	✕654,004	17,894,720	1,431,578	558,625	✕872,953
1916	15,461,077	1,236,886	1,789,585	552,699	18,899,269	1,511,942	1,789,585	277,643
1917	16,672,028	1,333,762	4,103,397	2,769,635	20,821,960	1,665,757	4,103,397	2,437,640
1918	17,178,902	1,374,312	4,171,733	2,797,421	22,159,277	1,772,742	4,171,733	2,398,991
1919	18,820,693	1,345,655	✕ 4,025,281	✕ 2,679,626	22,783,256	1,822,660	✕ 4,025,281	✕ 2,202,621
1920	16,676,291	1,380,263	5,420,915	4,070,652	23,916,563	1,913,488	5,420,915	3,507,430
1921	17,103,228	1,368,258	3,963,326	2,595,068	25,178,383	2,014,271	3,963,326	1,949,055
1922	16,816,199	1,345,296	4,989,948	3,644,652	26,947,082	2,075,767	4,989,948	2,914,181
1923	16,468,544	1,317,484	5,213,570	3,896,086	26,826,112	2,146,089	5,213,570	3,067,481
Total		$17,999,146	$37,900,303	$20,901,157		$22,477,100	$37,960,303	$15,483,203

Summary-

✕Deficit from 1909 to 1918, Inclusive	✕$ 2,704,682	✕$ 3,331,839
✕Surplus from 1919 to 1923, Inclusive	✕ 23,005,839	✕ 18,754,942
Net Surplus as above	$20,901,157	$15,423,203

(✕ Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

AND

VIRGINIAN GASOLINE AND OIL COMPANY

COMPARISON OF BALANCE SHEETS AT DECEMBER 31, 1910 AND 1923

ASSETS	December 31 1910	December 31 1923	Increase or ×Decrease
PROPERTY, PLANT, RIGHTS, FRANCHISES, ETC.:			
Acquired through Purchase or Construction	$13,499,357.01	$32,544,989.36	$19,045,632.35
Added through Appraisal of Acreage	-	41,524,226.47	41,524,226.47
	$13,499,357.01	$74,069,215.83	$60,569,858.82
INVESTMENTS:			
Securities Owned	$ 76,701.00	$ 188,452.44	$ 111,751.44
Sinking Fund Investments	-	1,209,296.75	1,209,296.75
Reacquired Securities	-	103,053.00	103,053.00
	$ 76,701.00	$ 1,500,802.19	$ 1,424,101.19
MINERAL RIGHTS:			
Prepaid Insurance	$ -	$ 86,284.05	$ 86,284.05
Prepaid Rentals	-	150,000.00	150,000.00
Prepaid Taxes	-	14,972.87	14,972.87
	$ -	$ 251,256.92	$ 251,256.92
CURRENT ASSETS:			
Cash	$66, 66,906.14	$ 1,5?,823.77	$ 4,460,917.63
Notes Receivable	456.15	15,206.95	14,752.80
Accounts Receivable	275,234.95	1,665,063.65	1,389,128.70
Material and Supplies	117,104.56	414,298.84	297,194.28
	$ 460,401.80	$ 2,672,397.21	$ 3,161,990.41
	$14,036,464.81	$79,413,672.15	$65,377,207.34

LIABILITIES	December 31 1910	December 31 1923	Increase or ×Decrease
CAPITAL STOCK:	$ 6,000,000.00	$30,890,200.00	$24,890,200.00
FUNDED DEBT:			
Debenture Bonds	$ 4,392,072.90	$ -	×$ 4,392,072.90
First Mortgage Bonds	-	10,921,000.00	10,921,000.00
Underlying Bonds	2,707,500.00	-	×2,707,500.00
	$ 7,099,572.90	$10,921,000.00	$ 3,821,427.10
CURRENT LIABILITIES:			
Accounts Payable	$ 337,556.15	$ 276,578.19	×$ 60,979.96
Notes Payable	650,000.00	-	×650,000.00
Accrued Taxes	-	707,595.48	707,595.48
Accrued Interest	9,827.99	16,653.31	6,825.32
Security Deposits	13,310.94	129,235.00	115,924.06
Unclaimed Accounts	-	9,281.36	9,281.36
	$ 1,010,697.08	$ 1,139,343.34	$ 128,646.26
RESERVES:			
Depletion and Depreciation Based on Cost	$ -	$12,791,812.78	$12,791,812.78
Depletion of Capital Surplus	-	11,154,113.09	11,154,113.09
Contingent Reserve	-	35,723.93	35,723.93
	$ -	$23,981,649.80	$23,981,649.80
CAPITAL SURPLUS:			
Created by Appraisal of Acreage	$ -	$41,524,226.47	$41,524,226.47
Created by Appraisal of Properties Purchased	-	47,382.80	47,382.80
Less-			
Depletion of Capital Surplus	-	×11,154,113.09	×11,154,113.09
Stock Dividends	-	×20,890,200.00	×20,890,200.00
	$ -	$ 9,527,296.18	$ 9,527,296.18
EARNED SURPLUS:			
Appropriated for Sinking Fund Purposes	$ -	$ 1,747,480.63	$ 1,747,480.63
Unappropriated	×73,805.17	1,206,702.00	1,280,507.37
	×$ 73,805.17	$ 2,954,182.63	$ 3,027,988.00
	$14,036,464.81	$79,413,672.15	$65,377,207.34

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

AND VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF INCOME ACCOUNT - (PER BOOKS) - JULY 1, 1909 TO DECEMBER 31, 19

Line No.	Particulars	Six Months Ended December 31 1909	Year Ended December 1910	1911	1912	1913	1914	1915	1916	1917	19
(1)	GROSS EARNINGS:										
(2)	Gas Department	$[illegible],681.63	$1,747,[illegible].36	2,248,496.04	2,894,[illegible].87	2,644,004.01	$2,829,[illegible].84	2,947,176.94	4,07[illegible],220.[illegible]	6,602,829.60	6,67[illegible]
(3)	Gasoline Department	-	-	-	-	-	-	-	[illegible]70,900.17	1,918,940.48	2,[illegible]20
(4)	Oil Department	868.58	9,842.80	5[illegible],91[illegible].50	7[illegible],888.44	554,095.[illegible]4	178,278.06	142,254.85	289,201.97	666,619.95	1,[illegible]73
(5)	Carbon Black Department	-	-	-	-	-	-	-	-	-	
(6)	Tank Car Department	-	-	-	-	-	-	-	-	[illegible]24.72	[illegible]
(7)											
(8)	Total Gross Earnings	$[illegible]94,550.21	$1,757,748.16	2,299,409.84	[illegible],[illegible]28,862.01	[illegible],198,099.[illegible]	$[illegible],004,[illegible]20.90	[illegible],089,[illegible]71.79	4,7[illegible],[illegible]22.44	9,[illegible]88,414.78	10,[illegible]13
(9)											
(10)	OPERATING EXPENSES:										
(11)	Gas Department	$22[illegible],112.98	$1,402,102.86	1,956,204.[illegible]9	1,[illegible]48,[illegible]70.86	1,762,915.44	$1,967,181.76	1,664,887.82	1,68[illegible],272.00	2,054,442.85	2,[illegible]27
(12)	Gasoline Department	-	-	-	-	-	-	-	71,606.72	397,958.50	457
(13)	Oil Department	-	-	12,917.44	69,[illegible]96.12	71,18[illegible].22	41,917.80	40,[illegible]36.75	41,980.46	79,864.67	111
(14)	Carbon Black Department	-	-	-	-	-	-	-	-	-	
(15)	Tank Car Department	-	-	-	-	-	-	-	-	-	
(16)											
(17)	Total Operating Expenses	$22[illegible],112.98	$1,402,102.86	1,969,121.[illegible]8	1,414,766.68	1,834,098.66	$2,009,099.58	1,705,224.27	1,796,829.18	2,531,966.02	2,[illegible]72
(18)											
(19)	NET EARNINGS BEFORE DEPLETION, DEPRECIATION AND FEDERAL INCOME TAXES:										
(20)	Gas Department	$170,868.68	$ [illegible]45,800.50	289,291.68	1,249,60[illegible].01	881,088.57	$ 862,161.06	1,282,289.42	2,[illegible]89,948.30	4,748,086.78	4,[illegible]61
(21)	Gasoline Department	-	-	-	-	-	-	-	299,29[illegible].48	1,520,981.98	1,[illegible]87
(22)	Oil Department	868.58	9,842.80	40,996.06	664,492.32	482,916.[illegible]3	1[illegible],360.26	101,918.10	247,251.81	587,088.28	1,[illegible]60
(23)	Carbon Black Department	-	-	-	-	-	-	-	-	-	
(24)	Tank Car Department	-	-	-	-	-	-	-	-	[illegible]24.72	[illegible]
(25)											
(26)	Total Net Earnings before Depletion, Depreciation and Federal Income Taxes	$171,[illegible]37.26	$ [illegible]88,[illegible]43.[illegible]0	[illegible]40,287.71	1,914,098.[illegible]	1,[illegible]64,[illegible]00.69	$ 99[illegible],8[illegible]1.[illegible]2	1,[illegible]84,207.82	2,[illegible]76,[illegible]93.26	6,856,448.78	7,[illegible]25
(27)											
(28)	PROFIT AND LOSS SUSPENSE ADJUSTMENTS	X18,966.60	X68,477.97	X[illegible],866.[illegible]	12,006.01	14,1[illegible]9.[illegible]	22,852.76	X22,642.42	[illegible]9,736.25	X60,816.29	X[illegible]
(29)											
(30)	Total Above	$152,[illegible]70.66	$ 290,[illegible]65.[illegible]	298,721.[illegible]8	1,926,[illegible]01.[illegible]4	1,[illegible]76,200.66	$1,[illegible]16,[illegible]74.10	1,[illegible]61,868.10	2,976,249.81	6,795,[illegible]92.80	7,[illegible]8
(31)											
(32)	NON-OPERATING INCOME:										
(33)	Interest	$ -	$ 7,971.70	1,[illegible]78.40	1,[illegible]00.91	11,[illegible]00.76	$ 6,[illegible]86.97	[illegible],[illegible]10.28	17,671.45	12,[illegible]89.64	[illegible]
(34)	Rent	-	-	-	1,806.80	1,601.50	277.00	117.50	[illegible]5[illegible].28	484.00	
(35)	Miscellaneous	[illegible]82.00	[illegible]92.00	[illegible]08.58	-	[illegible]20.61	444.45	782.50	941.64	-	
(36)	Profit and Loss Suspense Adjustments	-	X47,[illegible]98.[illegible]	64,[illegible]61.70	7,067.20	97,121.74	1,[illegible]54.75	2,[illegible]89.70	-	-	
(37)											
(38)	Total Non Operating Income	$ [illegible]82.00	$ [illegible]8,[illegible]94.[illegible]	65,[illegible]42.[illegible]	10,474.61	110,[illegible]44.[illegible]	$ 8,[illegible]61.17	6,[illegible]69.98	19,[illegible]06.[illegible]4	1[illegible],[illegible]73.64	[illegible]
(39)											
(40)	Total Gross Income	$152,[illegible]52.66	$ 251,[illegible]70.40	[illegible]64,[illegible]64.08	1,[illegible]36,[illegible]75.[illegible]	1,[illegible]86,[illegible]44.67	$1,[illegible]47,[illegible]43.[illegible]7	1,[illegible]68,[illegible]35.08	2,[illegible]95,[illegible]15.[illegible]	6,809,006.14	7,[illegible]2
(41)											
(42)	DEDUCTIONS FROM GROSS INCOME:										
(43)	Bond Interest	$ 37,000.00	$ [illegible]83,[illegible]81.07	419,[illegible]44.[illegible]	414,[illegible]65.[illegible]	[illegible]08,789.11	$ [illegible]96,[illegible]49.[illegible]	[illegible]80,[illegible]19.[illegible]	[illegible]55,[illegible]76.99	[illegible]98,[illegible]42.67	[illegible]
(44)	General Interest	-	[illegible]8,[illegible]78.[illegible]	[illegible]6,[illegible]57.61	[illegible]3,[illegible]54.01	40,[illegible]49.[illegible]	[illegible]8,[illegible]16.[illegible]	[illegible]0,[illegible]73.[illegible]	18,[illegible]89.61	[illegible],[illegible]08.47	[illegible]
(45)	Sinking Fund Appropriations	-	-	-	-	-	-	-	-	-	
(46)											
(47)	Total Deductions	$ 37,000.00	$ [illegible]81,[illegible]39.62	476,[illegible]01.97	[illegible]48,[illegible]19.84	[illegible]49,[illegible]78.67	$ [illegible]47,[illegible]56.08	[illegible]70,[illegible]92.95	[illegible]74,[illegible]68.60	[illegible]07,[illegible]51.14	[illegible]
(48)											
(49)	Surplus Net Income before Depletion, Depreciation and Federal Income Taxes	$ [illegible]5,[illegible]52.66	$ [illegible]70,[illegible]89.22	[illegible]11,[illegible]97.91	1,[illegible]88,[illegible]56.41	1,[illegible]37,[illegible]06.[illegible]0	$ [illegible]07,[illegible]79.19	[illegible]97,[illegible]42.[illegible]3	2,[illegible]20,[illegible]47.28	6,[illegible]01,[illegible]85.00	6,[illegible]

(X Denotes red in copy.)

AND SUBSIDIARIES

OIL COMPANY

LY 1, 1909 TO DECEMBER 31, 1923

Ended December 31

1916	1917	1918	1919	1920	1921	1922	1923	Total	Line No.
									(1)
77,220.10	6,002,829.60	6,676,501.16	6,723,488.94	7,547,019.92	6,779,267.72	7,228,489.01	7,730,176.40	68,149,285.04	(2)
70,900.17	1,918,940.48	2,720,701.77	2,894,409.78	3,614,510.10	2,756,084.14	3,057,900.53	3,019,880.89	19,942,706.90	(3)
89,401.97	666,619.95	1,171,694.06	1,300,117.81	1,257,022.65	880,648.91	805,541.74	417,774.81	6,044,696.75	(4)
-	-	-	81,699.26	126,774.67	76,794.79	176,657.92	145,426.96	867,707.60	(5)
-	324.72	49,156.61	74,724.70	74,170.64	48,049.49	88,717.78	81,340.70	779,147.76	(6)
									(7)
37,522.44	9,588,614.75	10,611,991.80	10,874,700.49	12,593,497.94	9,807,676.19	10,982,905.98	11,788,579.40	97,055,326.85	(8)
									(9)
									(10)
81,272.00	3,084,442.85	2,747,424.42	2,858,460.04	3,734,809.47	3,700,665.36	3,902,927.52	3,422,456.68	32,425,829.84	(11)
71,806.72	997,956.50	697,566.40	784,476.28	845,875.19	656,708.71	805,052.09	847,027.62	6,655,909.11	(12)
41,950.46	79,564.67	111,191.59	186,777.78	221,417.45	145,692.90	187,749.84	149,576.47	1,289,184.07	(13)
-	-	-	19,954.94	24,876.72	21,584.96	28,905.17	16,642.24	110,984.23	(14)
-	-	-	8,942.80	16,151.77	13,624.99	12,608.40	29,186.00	80,714.92	(15)
									(16)
96,829.18	2,891,966.08	2,875,824.41	3,248,547.44	4,155,088.84	3,918,676.82	4,011,917.22	4,466,885.01	37,840,541.17	(17)
									(18)
									(19)
									(20)
89,948.30	4,748,086.78	4,749,076.74	5,665,025.90	4,172,210.48	5,078,401.96	5,926,168.49	4,707,719.72	38,717,476.20	(21)
98,297.48	1,840,981.98	1,869,493.97	2,309,977.10	3,076,674.91	2,299,775.85	2,850,268.24	2,166,836.91	16,306,797.74	(22)
47,251.81	567,088.28	1,290,800.47	1,147,784.19	1,091,609.20	648,154.01	776,191.80	866,190.34	6,725,734.68	(23)
-	-	-	61,976.34	101,896.15	54,809.47	110,954.25	126,764.72	456,382.17	(24)
-	324.72	49,156.61	68,491.50	56,015.69	71,218.44	46,108.95	58,154.70	896,472.84	(25)
									(26)
76,497.26	8,856,448.76	7,856,167.79	7,445,772.98	8,442,789.40	8,886,939.67	8,971,688.78	8,941,694.79	59,514,787.88	(27)
									(28)
93,736.25	460,316.27	86,129.06	17,712.50	6,129.62	87,676.12	29,486.74	18,486.43	97,401.89	(29)
									(30)
76,249.51	8,795,954.50	7,450,041.85	7,459,085.45	8,477,279.78	8,972,648.79	7,001,175.50	8,907,427.96	59,421,185.99	(31)
									(32)
									(33)
17,871.43	12,589.64	26,909.75	34,691.61	41,156.16	38,484.61	44,884.04	46,754.47	294,568.37	(34)
654.43	484.00	1,587.00	1,540.56	2,014.70	2,686.19	294.92	187.88	20,209.58	(35)
941.64	-	1,850.11	1,540.01	785.48	459.40	2,106.24	4,504.19	17,881.68	(36)
-	-	-	-	-	-	-	-	128,494.46	(37)
									(38)
19,466.74	13,073.64	30,346.86	37,752.18	43,956.34	40,296.80	47,081.20	51,046.52	454,141.09	(39)
									(40)
995,813.88	8,809,006.14	7,480,751.99	7,496,037.63	8,466,165.71	8,014,954.29	7,048,256.70	8,954,470.48	59,878,817.08	(41)
									(42)
									(43)
455,378.99	396,642.67	545,440.00	626,687.50	626,840.00	684,070.00	748,955.67	597,781.88	7,740,495.69	(44)
16,989.61	8,606.47	21,278.87	2,775.98	1,529.98	4,967.84	10,816.41	21,788.05	478,541.62	(45)
-	-	-	-	-	478,586.15	781,858.68	680,274.80	1,907,699.51	(46)
									(47)
474,368.60	405,251.14	566,718.87	629,463.48	628,369.98	1,167,619.97	1,541,630.76	1,279,424.47	9,667,776.82	(48)
									(49)
									(50)
540,967.28	8,201,755.00	6,914,033.12	6,866,404.75	7,855,671.73	6,849,712.32	5,809,648.54	8,678,046.08	50,211,760.26	(51)
									(52)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

AND VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF SURPLUS ACCOUNT FROM DATE OF ORGANIZATION (JULY 1, 1909)

Line No.	Particulars	Six Months Ended December 31 1909	Year Ended December 1910	1911	1912	1913	1914	1915	1916	1917	
(1)	EARNED SURPLUS:										
(2)	Balance at Beginning of Period	$ -	$ 95,854.66	$ 77,808.17	$ 187,741.08	1,508,782.97	$2,994,490.97	$ 3,250,467.47	1,167,454.04	1,746,150.63	2,0
(3)	Add-										
(4)	Credit Adjustments	-	-	-	-	-	-	-	-	-	
(5)	Surplus Net Income	95,854.66	170,189.22	111,933.91	1,488,156.41	1,079,402.20	770,000.00	-	180,355.21	1,764,564.69	
(6)							567,979.19	937,942.19	2,540,947.25	6,201,755.00	6,0
(7)	Balance	$95,854.66	$ 94,336.88	$188,141.08	1,996,418.99	2,588,185.16	$3,488,469.56	4,187,809.66	$ 3,888,856.50	9,711,669.40	8,0
(8)											
(9)											
(10)	Deduct-										
(11)	Debit Adjustments	$ -	$ -	-	-	-	$ -	-	2,976.92	-	
(12)	Dividends-										
(13)	Cash	-	-	-	-	-	-	-	-	-	
(14)	Stock	-	-	-	-	-	-	1,000,000.00	1,070,000.00	1,600,000.00	1,0
(15)	Federal Income Taxes	-	-	-	-	-	-	-	-	1,000,000.00	
(16)	Depreciation and Adjustment	-	99,468.61	27,402.00	24,662.97	10,648.79	77,804.19	20,358.82	19,226.95	1,555,610.54	
(17)	Provision for Depletion and Depreciation	-	-	-	-	-	-	-	-	-	
(18)		-	-	-	-	-	-	-	-	1,459,908.99	1,0
(19)	Total Deductions	$ -	$ 99,468.61	$ 27,402.00	24,662.97	10,648.79	$ 77,804.19	1,020,358.82	2,092,203.87	7,615,518.67	6,0
(20)											
(21)											
(22)	Balance at End of Period	$95,854.66	$ 94,336.88	$ 77,809.17	187,741.08	1,508,782.97	$3,488,469.56	3,250,467.47	1,167,454.04	1,746,150.63	2,0
(23)											
(24)											
(25)	CAPITAL SURPLUS BY APPRAISAL:										
(26)	Balance at Beginning of Period	$ -	$ -	-	-	-	$ -	-	-	-	
(27)	Credits through Appraisal of Property	-	-	-	-	-	-	-	-	-	40,7
(28)	Stock Dividend	-	-	-	-	-	-	-	-	-	
(29)	Depletion	-	-	-	-	-	-	-	-	-	X 2,1
(30)											
(31)											
(32)	Balance at End of Period	$ -	$ -	-	-	-	$ -	-	-	-	38,6

(X Denotes red in copy.)

[illegible]

[illegible] COMPANY

[illegible]IFICATION (JULY 1, 1909)

Ended December 31

1916	1917	1918	1919	1920	1921	1922	1923	Summary	Line No.
456.04	1,748,450.87	2,099,150.59	2,410,857.54	2,791,156.18	2,577,255.28	1,[illegible]96.86	694,897.75	-	1
2
155.21	1,787,567.67	994.78	90.98	-	149,085.60	-	495,047.67	4,748,226.19	4
947.25	6,201,755.00	6,899,898.16	6,842,464.72	7,855,641.33	4,869,[illegible]12.[illegible]	5,009,645.54	5,[illegible]3,046.08	50,411,780.26	5
6
558.50	9,711,669.46	8,999,181.53	9,253,053.28	10,646,977.91	7,571,[illegible]29.13	6,[illegible]54,540.40	6,684,671.67	55,940,000.45	7
8
9
976.92	-	1,980.61	-	50,071.95	87,849.18	59,187.85	270,265.42	478,[illegible]93.13	10
000.00	1,[illegible]00,000.00	1,[illegible]00,000.00	1,[illegible]00,875.00	4,[illegible]97,400.00	1,814,[illegible]45.[illegible]	1,[illegible]50,0[illegible]0.00	1,000,000.00	16,[illegible]84,900.00	11
-	1,[illegible]00,000.00	-	-	-	-	-	-	-	12
-	1,835,810.54	990,600.01	549,[illegible]07.18	98[illegible],[illegible]95.07	179,178.20	[illegible]97,654.80	[illegible]18,951.26	4,000,000.00	13
228.95	-	249,[illegible]65.00	186,857.[illegible]	104,144.97	208,608.71	149,[illegible]07.98	98,681.10	4,954,884.94	14
-	1,639,900.[illegible]	1,677,[illegible]36.79	1,809,981.16	2,070,7[illegible]1.84	2,[illegible]66,465.16	1,967,764.41	1,[illegible]84,051.67	1,247,[illegible]87.24	15
16
405.87	7,819,310.87	8,509,564.01	8,491,897.07	8,075,722.87	6,841,728.88	5,[illegible]7,944.85	5,497,909.47	14,[illegible]90,000.94	17
18
19
[illegible]50.87	8,099,150.59	8,440,557.54	8,791,155.18	8,877,255.28	1,322,696.86	694,897.75	1,206,700.20	1,206,700.20	20
21
22
23
-	-	-	38,604,017.[illegible]	[illegible]8,458,800.[illegible]	14,[illegible]1[illegible],[illegible]6.[illegible]	1[illegible],[illegible]6[illegible],740.48	11,278,[illegible]40.[illegible]	-	24
-	-	40,749,[illegible]26.47	-	-	-	[illegible]84,[illegible]6[illegible].80	-	-41,871,609.[illegible]	25
-	-	[illegible]2,149,[illegible]19.[illegible]	[illegible]2,149,[illegible]19.[illegible]	[illegible]20,[illegible]00,000.00	-	[illegible]190,[illegible]00.00	-	[illegible]40,590,[illegible]00.00	26
-	-	[illegible]2,149,[illegible]19.[illegible]	[illegible]2,149,[illegible]19.[illegible]	-2,148,[illegible]31.[illegible]	[illegible]1,849,[illegible]40.[illegible]	[illegible]1,719,[illegible]4[illegible].[illegible]	[illegible]1,781,044.[illegible]	[illegible]11,184,[illegible]17.09	27
28
-	-	38,604,[illegible]1[illegible].[illegible]	[illegible]8,458,800.[illegible]	14,[illegible]1[illegible],[illegible]6.[illegible]	1[illegible],[illegible]6[illegible],740.48	11,278,[illegible]40.[illegible]	9,[illegible]7,[illegible]98.18	9,[illegible]7,[illegible]98.18	29
30

UNITED FUEL GAS COMPANY, INC., AND SUBSIDIARIES

DETAILED STATEMENT OF EXPENSES - GAS DEPARTMENT

PER BOOKS - JULY 1, 1909 - DECEMBER 31, 1923

Line No.	Particulars	Six Months Ended December 31 1909	Year Ended December 1910	1911	1912	1913	1914	1915	1916	1917	1918
(1)	OPERATING EXPENSES AND ORDINARY TAXES:										
(2)	Gas Purchased	$ 12,012.68	81,080.71	130,902.01	147,435.61	170,801.15	253,959.58	316,793.24	338,118.71	374,431.67	374,082.26
(3)											
(4)	Production Expenses-										
(5)	Operation-										
(6)	Superintendence	$ 2,270.36	2,990.61	2,318.23	1,410.35	330.35	288.74	-	361.90	8,600.83	9,821.14
(7)	Operating Wells and Lines	8,306.46	89,241.85	96,243.90	97,350.60	96,088.68	106,690.73	77,820.18	84,702.08	85,325.68	103,274.95
(8)	Production Tools and Supplies	827.62	4,829.11	6,879.74	7,498.07	5,863.99	5,480.65	5,968.16	5,608.65	8,801.12	9,917.60
(9)	Field Measuring Stations	-	-	-	-	-	-	-	5,867.80	7,962.33	12,710.42
(10)	Leasehold Expenses	-	-	-	-	-	-	-	34,852.90	37,400.86	49,028.72
(11)	Rentals on Unoperated Leases	86,303.61	396,283.45	396,688.78	384,746.84	440,847.54	475,047.54	516,926.04	514,968.61	541,310.60	526,095.28
(12)	Well Royalties	4,325.00	31,647.31	54,990.55	56,820.87	66,115.59	77,952.33	91,061.82	104,299.37	137,616.16	172,812.01
(13)	Cancelled and Surrendered Leases	64.72	111,326.67	419,092.50	46,109.56	64,578.61	127,736.87	86,841.10	3,017.64	1,999.96	3,878.78
(14)	Miscellaneous and Insurance	-	-	-	-	-	-	-	3,887.03	38,480.74	14,610.98
(15)	Cost of Obtaining Leases	12,421.50	56,824.37	56,180.79	73,287.32	73,357.69	59,465.40	47,598.91	19,141.76	-	-
(16)	Drilling Tools and Tearing Expense	-	8,084.44	24,323.66	6,516.05	3,970.96	12,824.62	418,180.38	-	-	-
(17)											
(18)	Total Operation	$108,519.09	781,227.81	1,030,676.89	689,783.66	716,352.17	864,379.89	805,088.67	751,472.49	864,497.68	901,084.80
(19)											
(20)	Maintenance-										
(21)	Changing Construction	$ -	-	-	-	-	-	-	3,064.87	2,910.07	2,465.14
(22)	Repairs to Wells	1,124.99	36,503.11	48,691.93	45,969.75	39,091.75	57,549.02	43,070.39	18,395.48	39,737.13	48,386.24
(23)	Repairs to Field Lines	-	-	-	-	-	-	-	19,187.45	34,330.97	44,270.36
(24)	Field Measuring Stations	-	-	-	-	-	-	-	1,102.67	1,861.06	2,905.14
(25)	Drilling New Wells	10,277.03	344,669.90	476,738.54	134,148.58	401,915.89	525,083.48	-	-	-	-
(26)											
(27)	Total Maintenance	$ 11,402.02	380,973.01	525,430.47	180,118.33	441,007.64	582,634.50	43,070.39	43,750.47	78,827.23	99,026.90
(28)											
(29)	Total Production Expense	$122,921.11	1,162,200.82	1,556,107.36	869,871.99	1,157,359.81	1,446,814.39	851,159.06	795,222.96	943,324.91	1,000,081.70
(30)											
(31)	Transmission-										
(32)	Operation-										
(33)	Superintendence	$ 375.09	222.24	168.24	-	30.00	-	-	97.25	2,882.47	4,382.36
(34)	Transmission Lines	3,284.92	12,510.16	27,447.20	32,481.78	28,553.32	28,187.01	29,728.61	29,315.47	31,207.14	39,978.81
(35)	Transmission Tools and Supplies	21.74	336.52	477.10	819.67	840.64	1,645.01	939.60	1,623.53	3,000.18	2,379.33
(36)	Compressing Stations	-	-	-	-	-	20,327.22	24,732.19	42,069.83	74,474.96	144,957.83
(37)	Measuring Stations	50.00	1,205.10	2,870.76	1,022.22	6,742.18	8,968.90	9,591.44	5,007.89	5,309.05	6,347.21
(38)	Miscellaneous and Insurance	15.68	91.18	45.09	995.23	900.66	614.72	668.23	1,086.30	1,277.23	1,972.37
(39)											
(40)	Total Operation	$ 4,047.43	14,347.22	30,708.52	35,318.90	37,197.65	59,739.86	66,657.07	79,202.27	118,169.00	199,997.99
(41)											
(42)	Maintenance-										
(43)	Changing Construction	$ 427.04	5,437.88	6,045.92	1,707.84	1,621.43	348.97	9,893.73	1,667.15	1,250.33	1,128.07
(44)	Transmission Lines	1,566.14	14,349.97	16,797.58	22,825.61	20,824.06	37,123.75	23,904.83	20,373.02	30,718.84	50,815.99
(45)	Compressing Stations	-	-	-	-	-	4,823.40	4,046.73	7,898.07	19,593.93	37,886.57
(46)	Measuring Stations	-	108.63	811.88	184.36	871.68	885.78	655.10	110.63	1,151.94	1,201.85
(47)											
(48)	Total Maintenance	$ 1,993.18	19,896.48	23,655.38	24,728.01	23,316.14	42,981.87	38,500.39	30,048.87	52,714.74	90,728.18
(49)											
(50)	Total Transmission	$ 6,040.61	34,238.70	54,363.70	60,054.91	60,513.79	102,721.73	104,157.46	109,251.14	170,873.74	290,726.09
(51)											

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...e COMPANY, INC., AND SUBSIDIARIES

...MENT OF EXPENSES - GAS DEPARTMENT

JULY 1, 1909 - DECEMBER 31, 1949

1 9 1 6	1 9 1 7	1 9 1 8	1 9 1 9	1 9 2 0	1 9 2 1	1 9 2 2	1 9 2 3	T o t a l	Line No.
									(1)
3,110.71	374,431.67	374,062.26	380,216.39	387,774.58	444,300.13	556,410.38	619,263.69	4,691,582.76	(2)
									(3)
									(4)
									(5)
361.90	8,600.53	9,321.14	11,982.70	13,370.25	14,306.26	13,136.05	7,384.15	85,604.47	(6)
2,703.08	85,325.58	103,274.95	109,956.82	142,466.51	121,296.78	117,511.66	114,104.21	1,425,184.73	(7)
1,606.65	8,801.12	9,917.60	8,677.19	10,427.96	7,755.48	9,726.97	9,601.44	106,150.75	(8)
1,387.50	7,962.33	14,710.44	13,034.40	16,227.98	16,456.00	17,173.46	17,485.91	106,607.86	(9)
1,382.90	37,400.86	49,048.78	49,355.58	50,589.69	48,319.34	46,756.59	43,701.98	367,955.33	(10)
1,948.61	341,310.60	520,196.22	575,807.57	646,287.33	664,533.37	661,158.98	628,535.49	7,483,093.89	(11)
4,499.37	137,614.16	174,812.01	170,359.57	176,768.64	177,810.53	181,771.94	196,456.76	1,691,459.63	(12)
1,017.64	1,999.96	3,578.78	1,377.53	641.50	2,078.96	1,548.93	253.62	829,557.46	(13)
7,667.03	58,460.74	14,810.90	101,149.58	56,891.57	78,147.68	29,428.27	50,145.82	389,593.58	(14)
2,141.78	-	-	-	-	-	-	-	400,277.62	(15)
-	-	-	-	-	-	-	-	12,911.58	(16)
									(17)
1,478.49	664,497.66	901,054.60	1,039,919.73	1,160,716.17	1,135,006.16	1,089,467.51	1,100,304.15	12,048,582.67	(18)
									(19)
									(20)
3,264.97	8,910.07	8,465.14	9,035.60	14,671.91	7,009.82	13,183.71	9,473.13	80,240.85	(21)
2,340.46	39,737.13	49,386.24	61,991.22	98,438.66	120,954.57	142,797.26	121,504.50	914,698.24	(22)
2,137.43	34,330.97	44,270.58	37,413.60	31,338.70	27,890.93	29,168.99	24,167.33	229,549.51	(23)
1,104.67	1,841.06	2,905.14	2,835.49	3,538.55	4,264.06	3,904.42	4,262.76	34,646.05	(24)
-	-	-	-	-	-	-	-	1,690,853.42	(25)
									(26)
3,750.47	78,827.35	99,026.90	117,276.11	149,988.66	159,944.56	149,481.54	179,287.72	2,919,945.37	(27)
									(28)
2,222.96	943,324.91	1,000,081.70	1,156,769.64	1,296,662.41	1,294,951.14	1,306,736.85	1,287,872.47	15,768,328.04	(29)
									(30)
									(31)
									(32)
97.23	2,882.67	4,382.36	4,147.30	4,535.45	4,760.60	4,914.23	4,673.49	31,310.46	(33)
3,315.47	31,207.14	39,976.01	37,102.89	41,266.08	36,000.31	32,107.13	32,703.22	440,153.40	(34)
1,623.53	3,006.15	2,376.33	1,780.82	3,529.27	4,733.58	1,772.94	2,078.21	28,866.21	(35)
3,069.83	74,474.96	144,967.80	203,341.83	301,797.56	309,715.32	350,010.43	381,691.70	1,853,965.22	(36)
2,007.89	9,309.05	6,347.21	7,310.36	8,698.09	8,665.58	8,957.49	9,619.69	90,092.99	(37)
2,088.30	1,277.23	1,972.37	3,416.95	9,758.76	1,455.90	1,542.71	9,400.06	32,950.79	(38)
									(39)
9,802.27	118,159.00	199,997.90	257,120.00	369,585.35	367,151.97	400,154.61	440,965.42	2,479,338.87	(40)
									(41)
									(42)
2,667.15	1,850.32	1,126.07	8,012.33	13,089.41	5,377.74	5,352.68	8,719.90	68,927.42	(43)
2,373.02	30,716.84	80,815.99	58,340.15	46,277.96	34,209.42	44,663.92	40,776.70	448,437.87	(44)
2,098.07	19,893.03	37,688.57	66,630.09	109,649.13	108,816.13	115,367.57	104,913.40	838,423.06	(45)
110.63	1,151.84	1,901.55	1,041.10	904.45	972.17	1,584.96	1,708.78	11,737.73	(46)
									(47)
9,048.97	82,714.74	90,728.18	112,293.87	230,700.98	147,176.43	160,117.13	159,110.78	1,164,827.03	(48)
									(49)
9,251.14	170,973.74	290,728.08	369,613.87	600,358.40	514,528.40	565,269.74	600,084.20	5,743,805.87	(50)
									(51)

...notes ref to copy.)

Line No.	Particulars	Six Months Ended December 31 1909	1910	1911	1912	1913	1914	1915	1916	1917	1918
1	OPERATING EXPENSES AND ORDINARY TAXES (Continued):										
2	Distribution-										
3	Operation-										
4	Superintendence	$ -									
5	Operating Lines	-	10,914.98	9,598.19	11,770.65	17,729.71	15,964.65	15,913.91	[illegible]	[illegible]	[illegible]
6	Connecting and Disconnecting Meters	-	15,361.09	15,505.06	16,469.69	[illegible]	94,408.91	[illegible]	[illegible]	[illegible]	[illegible]
7	Electrolysis	-	-	-	189.81	387.54	[illegible]	459.09		[illegible]	[illegible]
8	Shop Expenses	-	3,775.67	2,897.47	2,154.08	2,611.96	2,845.35	3,775.58	[illegible]	[illegible]	[illegible]
9	Miscellaneous and Insurance	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
10									[illegible]	[illegible]	[illegible]
11	Total Operation	$ -	30,044.97	27,796.66	31,583.60	35,128.18	34,784.98	31,699.58	[illegible]	[illegible]	[illegible]
12											
13	Maintenance-										
14	Changing Construction	$ -	4,514.45	5,097.58	5,847.04	15,195.17	14,180.81	7,981.58	[illegible]	[illegible]	[illegible]
15	Lines and Regulators	-	1,881.57	3,044.45	3,574.24	11,990.91	11,938.85	[illegible]	[illegible]	[illegible]	[illegible]
16	Meter and House Regulators	-	17,736.35	15,895.58	9,875.69	10,750.78	13,536.31	[illegible]	[illegible]	[illegible]	[illegible]
17	Services	-	9,869.58	8,155.17	5,915.53	666.48	198.39	904.94	[illegible]	[illegible]	[illegible]
18									[illegible]	[illegible]	[illegible]
19	Total Maintenance	$ -	33,776.45	32,979.94	25,861.81	35,195.33	39,514.54	39,306.06	[illegible]	[illegible]	[illegible]
20											
21	Total Distribution	$ -	61,838.85	55,866.59	58,845.33	85,863.59	68,962.34	71,005.71	[illegible]	[illegible]	[illegible]
22											
23	Commercial-										
24	Reading Meters	$ 3,551.12	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
25	Salaries of Office Force and Collectors	13,159.99	11,015.91	15,647.67	16,955.69	15,705.71	24,511.10	21,111.50	[illegible]	[illegible]	[illegible]
26	Rents, Heat, Light, Telephone Rentals and Tolls	2,155.15	1,641.65	2,414.47	2,007.54	2,895.66	2,795.81	1,103.81	[illegible]	[illegible]	[illegible]
27	Stationery and Supplies	1,869.91	2,177.68	1,584.99	1,555.53	1,511.01	1,149.11	1,040.89	[illegible]	[illegible]	[illegible]
28	Miscellaneous and Insurance	141.56	154.51	852.68	515.55	1,591.79	563.91	413.59	[illegible]	[illegible]	[illegible]
29	New Business	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
30									[illegible]	[illegible]	[illegible]
31	Total Commercial	$ 21,456.65	25,339.75	24,781.54	29,781.38	34,181.81	29,483.51	24,415.59	[illegible]	[illegible]	[illegible]
32											
33	General and Inter-departmental Expense-										
34	General Expense-										
35	Salaries and Expenses of General Officers	$ 6,667.74	11,498.69	11,550.54	13,172.50	17,561.53	19,811.77	21,111.89	[illegible]	[illegible]	[illegible]
36	General Office Expense	3,941.74	18,509.77	21,846.73	20,555.69	24,891.14	21,111.89	21,111.89	[illegible]	[illegible]	[illegible]
37	Private Telegraph and Telephone Lines	1,559.58	1,818.18	2,554.82	2,811.04	2,811.04	2,811.04	2,811.04	[illegible]	[illegible]	[illegible]
38	Legal Expense	6,185.13	15,055.75	25,259.58	15,519.10	6,259.58	13,111.89	5,640.13	[illegible]	[illegible]	[illegible]
39	Insurance	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
40	Damages, Judgments and General Damage Claims	35.58	580.58	253.55	5,687.78	1,583.55	1,511.89	1,111.89	[illegible]	[illegible]	[illegible]
41	Relief and Annuities	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
42	Miscellaneous	-	-	-	-	1,583.55	1,111.89	1,583.55	[illegible]	[illegible]	[illegible]
43	Outside Operations	6,586.79	8,779.58	8,385.79	28,811.18	28,583.58	28,583.58	28,583.58	[illegible]	[illegible]	[illegible]
44	Bad Debts	-	-	-	5,858.25	5,858.58	7,111.89	5,583.89	[illegible]	[illegible]	[illegible]
45	Public Regulation	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
46	Repairs to Buildings	1,791.11	2,588.74	1,858.58	1,588.48	1,858.79	1,588.58	2,111.74	[illegible]	[illegible]	[illegible]
47	Interest Expense	1,187.58	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
48											
49	Total General Expense	$ 28,211.45	58,830.58	73,851.63	110,858.48	108,583.58	118,111.79	111,111.89	[illegible]	[illegible]	[illegible]

...d December 31									Line No.
...6	1917	1918	1919	1920	1921	1922	1923	Total	
									1
									2
									3
991.88	3,909.72	4,070.89	4,091.29	4,225.01	4,355.78	4,274.92	4,289.63	33,008.12	4
269.29	14,167.61	18,878.12	21,626.85	31,136.59	31,226.60	22,587.41	25,806.08	257,098.01	5
296.06	16,639.96	24,780.73	26,840.93	34,516.22	34,927.85	30,915.13	31,266.08	324,532.44	6
-	347.53	406.33	2,304.58	2,157.26	283.64	109.36	16.29	6,701.22	7
590.67	7,573.12	7,575.02	9,172.65	10,547.85	8,096.33	6,763.60	8,143.50	85,862.69	8
272.08	3,145.93	1,442.59	1,083.24	1,226.94	737.58	1,904.96	2,902.36	13,715.69	9
									10
727.36	47,783.87	57,183.68	65,258.70	83,811.87	79,596.58	66,615.60	72,122.76	730,918.97	11
									12
									13
034.93	7,084.16	4,902.87	4,261.80	7,893.99	16,015.44	28,426.09	25,171.70	156,110.31	14
886.61	6,311.86	8,756.98	11,389.69	17,177.95	10,517.39	9,916.92	20,770.91	141,607.69	15
993.18	19,263.34	15,941.64	18,160.22	23,127.29	22,901.74	21,850.76	23,288.71	236,957.73	16
924.65	4,363.89	4,894.07	5,569.15	8,812.50	10,684.81	12,602.70	17,840.03	95,169.04	17
									18
849.37	39,012.67	34,495.53	39,397.62	56,711.73	60,089.06	73,809.46	87,071.35	629,644.77	19
									20
276.75	66,796.54	91,849.31	104,656.32	140,823.60	139,665.66	139,423.06	159,194.11	1,360,760.74	21
									22
									23
206.38	10,663.54	19,097.56	21,919.01	22,860.11	22,670.14	22,679.56	22,227.73	199,976.17	24
870.18	35,849.99	45,971.13	58,844.82	67,897.62	71,314.13	74,286.68	82,901.57	595,777.10	25
250.41	6,990.30	6,662.74	6,641.33	6,976.43	8,343.74	9,351.97	9,750.99	97,617.87	26
873.04	4,572.39	4,671.53	6,821.96	7,361.78	7,275.91	6,846.50	7,548.79	84,751.62	27
9.43	9.82	14.78	-	-	-	157.23	203.11	15,239.77	28
39.89	53.67	1.26	-	-	-	-	-	94.71	29
									30
249.83	61,039.91	76,439.98	90,227.02	104,496.14	109,603.92	113,021.94	122,240.19	988,457.24	31
									32
									33
									34
264.26	61,039.63	88,619.98	90,635.32	114,483.59	119,431.27	66,148.71	78,296.23	758,643.44	35
220.08	60,551.52	64,130.76	70,915.85	86,461.63	91,467.23	67,334.43	73,868.23	773,468.14	36
393.46	14,078.64	13,710.40	14,361.70	31,985.75	30,792.27	16,388.69	20,539.66	197,680.89	37
726.55	18,763.02	31,787.31	42,244.73	61,028.00	47,455.79	40,381.41	66,662.93	428,278.88	38
227.13	12,754.11	21,140.56	32,774.95	43,994.83	39,495.26	5,356.91	8,710.29	172,474.04	39
147.36	2,474.33	10,286.07	3,562.95	266.10	36,424.76	8,703.80	3,983.90	78,647.66	40
198.69	7,069.10	25,786.00	17,096.40	6,160.11	4,040.51	10,711.63	7,984.04	88,123.23	41
886.42	80,148.37	21,236.82	42,315.71	37,036.84	51,478.93	60,882.87	65,033.10	628,496.26	42
992.69	2,860.41	4,078.91	6,573.87	11,635.98	4,778.90	5,186.46	5,763.43	63,176.31	43
823.98	997.71	2,454.18	2,386.87	1,660.98	1,588.38	781.60	596.87	11,287.03	44
46.10	2,466.68	6.62	-	6.33	-	-	-	2,827.79	45
-	-	-	-	-	-	-	-	13,797.31	46
-	-	-	-	-	-	-	-	1,157.00	47
									48
977.76	371,198.70	383,334.85	423,069.93	394,717.60	406,861.95	281,494.21	350,425.67	3,111,636.36	49
									50

1867

Line No.	Particulars	Six Months Ended December 31 1909	1910	1911	1912	1913	1914	Year Ended December 1915	1916	1917	1918
1	OPERATING EXPENSES AND ORDINARY TAXES (Continued):										
2	General and Inter-departmental Expense- (Continued)										
3	Inter-departmental-										
4	Gas Used by Company- Credit	$ -	-	-	-	-	-	-	X39,736.54	X87,619.82	X94,736.
5	Cleaning Out Tools	-	-	-	-	-	-	-	X1,860.99	X 2,967.73	X 3,84
6	Company Teaming	-	-	-	-	-	-	-	3,123.55	11,243.62	13,70
7	Rents and Repairs to Buildings	-	-	-	-	-	-	1,515.58	X3,133.49	165.69	1,56
8	Cleaning Out Tools- Oil	-	-	-	-	-	-	-	-	X3,536.68	X1,07
9	Machine and Blacksmith Shop	-	-	-	-	-	-	-	X608.17	X 739.43	4
10	Ward Water Station	-	-	-	-	-	-	-	-	-	X 46
11	Drilling Tools	-	-	-	-	-	-	-	405.79	X3,967.55	-
12											
13	Total Inter-departmental	$ -	-	-	-	-	-	1,515.58	X 40,409.88	X89,430.60	X84,18
14											
15	Total General and Inter-departmental Expense	$ 25,219.61	62,623.55	73,901.63	110,638.69	122,545.38	118,813.78	123,129.20	127,967.91	181,778.10	199,08
16											
17	Total above items	$193,393.68	1,342,992.31	1,897,782.68	1,282,406.09	1,631,934.67	1,844,808.98	1,510,112.76	1,490,287.00	1,819,141.87	2,032,03
18											
19	Taxes (Other than Income and Excess Profits Taxes)	29,719.29	59,110.56	58,441.71	82,964.47	130,980.77	122,378.80	154,774.76	192,985.00	238,300.98	295,39
20											
21	Total Operating Expenses and Ordinary Taxes	$223,112.98	1,402,102.86	1,956,204.39	1,365,370.56	1,762,915.44	1,967,181.78	1,664,887.52	1,683,272.00	2,054,442.85	2,327,42
22											
23											

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d e d D e c e m b e r 3 1									
916	1917	1918	1919	1940	1921	1922	1923	Total	Line No.
									(1)
									(2)
0,736.54	X87,619.88	X94,755.69	X189,815.54	X167,382.97	X168,766.18	X142,235.61	X 144,026.84	X974,338.89	(3)
1,860.99	X 2,967.73	X 5,860.83	400.36	X 855.43	X39.21	2,694.28	X4,448.38	X 10,026.94	(4)
3,125.55	11,243.62	13,790.79	8,495.58	7,191.92	202.80	1,881.59	2,250.87	47,880.52	(5)
8,133.49	165.69	1,867.14	1,483.28	397.69	X1,006.86	1,319.58	2,642.31	5,951.66	(6)
-	X 9,886.68	X1,078.86	X 2,048.93	16.58	X1,131.64	X786.24	-	X10,866.80	(7)
X508.17	X 739.43	40.48	1,464.09	1,293.16	642.15	112.64	1,049.19	3,384.13	(8)
-	-	X 688.66	3,360.66	2,663.73	X949.63	X 68.38	-	4,320.97	(9)
405.79	X 8,967.86	-	-	-	-	-	-	X 3,861.76	(10)
0,409.88	X89,430.80	X84,188.43	X116,668.88	X156,678.18	X171,047.97	X 137,364.34	X 142,829.88	X 936,766.81	(11)
7,947.91	181,778.10	199,051.82	306,417.41	238,042.88	236,833.98	144,099.87	207,896.12	2,174,849.57	(12)
0,287.00	1,819,141.87	2,032,030.08	2,308,120.58	2,769,885.48	2,928,703.03	2,784,943.84	2,936,380.98	28,492,844.22	(13)
2,985.00	238,300.98	268,394.37	380,539.30	384,954.02	372,182.13	377,379.68	496,108.70	3,932,985.62	(14)
									(15)
0,272.00	2,054,442.85	2,347,424.42	2,688,660.04	3,384,809.47	3,300,885.36	3,302,323.82	3,422,456.68	32,425,829.84	(16)
									(17)

(as ref in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF PROPERTY ADDITIONS BY YEARS

FROM JULY 1, 1909 - DECEMBER 31, 1919

Line No.	Particulars	Six Months Ended Dec. 31, 1909	1910	1911	1912	1913	Year Ended December 31 1914	1915	1916	1917	1918
(1)	GAS DEPARTMENT:										
(2)	Equipment	$ 132,673.61	$4,500,599.84	$1,390,231.80	$ 447,871.28	$ 991,766.38	$950,478.11	$684,959.73	$1,614,508.05	$4,085,101.33	$ 791,396.[illegible]
(3)	Acreage Acquired	16,215.21	8,239,150.98	1,652,081.23	41,933.56	21,791.75	89,053.19	24,479.23	259,771.20	33,976.05	338,606.[illegible]
(4)											
(5)	Total	$ 148,888.82	$9,739,750.82	$3,042,313.03	$ 489,804.72	$1,013,510.13	$861,424.92	$660,480.50	$1,874,276.25	$4,051,125.28	$ 452,792.[illegible]
(6)											
(7)	Acreage Added thru Appraisal	-	-	-	-	-	-	-	-	-	32,124,303.[illegible]
(8)											
(9)	Total Gas Department	$ 148,888.82	$9,739,750.82	$3,042,313.03	$ 489,804.72	$1,013,510.13	$861,424.92	$660,480.50	$1,874,276.25	$4,051,125.28	$32,777,095.[illegible]
(10)											
(11)											
(12)	GASOLINE DEPARTMENT -										
(13)	Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ 31.86	$ 279,946.91	$ 187,698.10	$ 515,975.[illegible]
(14)											
(15)											
(16)	OIL DEPARTMENT:										
(17)	Equipment	$ -	$ -	$ -	$ 466,151.87	$ 126,923.69	$ 7,768.65	$ 54,168.31	$ 280,677.37	$ 296,980.17	$ 360,893.[illegible]
(18)	Acreage Acquired	-	-	-	-	-	-	-	-	-	-
(19)											
(20)	Total	$ -	$ -	$ -	$ 466,151.87	$ 126,923.69	$ 7,768.65	$ 54,168.31	$ 280,677.37	$ 296,980.17	$ 360,893.[illegible]
(21)											
(22)	Acreage Added thru Appraisal	-	-	-	-	-	-	-	-	-	5,624,923.[illegible]
(23)											
(24)											
(25)		$ -	$ -	$ -	$ 466,151.87	$ 126,923.69	$ 7,768.65	$ 54,168.31	$ 280,677.37	$ 296,980.17	$ 6,985,817.[illegible]
(26)											
(27)	CARBON BLACK DEPARTMENT:										
(28)	Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
(29)											
(30)											
(31)	INCOMPLETE CONSTRUCTION	$8,227,829.35	$4,617,112.03	$3,281,028.66	$ 111,448.65	$ 72,782.38	$ 76,983.97	$316,771.40	$ 296,743.17	$ 300,706.46	$ 9,878.[illegible]
(32)											
(33)	Total	$8,376,718.17	$5,122,638.84	$ 436,712.63	$1,067,104.94	$1,214,216.17	$926,840.24	$197,909.27	$2,733,645.70	$4,809,510.01	$42,288,481.[illegible]

(X Denotes red in copy.)

AND SUBSIDIARIES

IL COMPANY

TIONS BY YEARS

BER 31, 1962

ded December 31									Total	Line No.
16	1917	1918	1919	1920	1921	1922	1923			
										1
808.00	$4,088,101.33	$ 791,398.18	$ 868,217.71	$1,434,709.36	$1,304,861.62	$ 888,836.74	$ 993,194.05		$20,778,876.76	2
771.80	(33,976.00)	(336,606.06)	(48,750.72)	90,074.70	(102,014.81	(90,627.66)	89,749.36		6,732,920.26	3
										4
676.20	$4,051,125.33	$ 602,792.16	$ 819,466.99	$1,524,864.06	$1,152,846.81	$ 797,609.08	$1,082,943.41		$27,511,797.04	5
										6
-	-	32,184,303.20	-	-	-	-	-		32,124,303.20	7
										8
676.20	$4,051,125.33	$32,777,095.36	$ 819,466.99	$1,524,864.06	$1,152,846.81	$ 797,609.08	$1,082,943.41		$59,636,100.24	9
										10
										11
										12
946.91	$ 187,695.10	$ 315,970.96	$ 226,991.60	$ 271,911.81	$ 84,121.84	$ 93,631.26	$ 181,991.07		$ 1,790,302.81	13
										14
										15
										16
										17
677.37	$ 296,980.17	$ 360,593.77	$ 366,681.80	$ 367,339.73	$ 174,305.03	$ 303,448.45	$ 20,298.68		$ 2,811,397.32	18
-	-	-	-	-	-	236,713.22	(185.63		238,589.09	19
										20
677.37	$ 296,980.17	$ 360,593.77	$ 366,681.80	$ 367,339.73	$ 174,305.03	$ 542,161.67	$ 20,173.05		$ 3,049,986.41	21
										22
-	-	6,624,963.27	-	-	-	775,000.00	-		9,399,923.27	23
										24
677.37	$ 296,980.17	$ 6,980,917.04	$ 366,681.80	$ 367,339.73	$ 174,305.03	$1,317,161.67	$ 20,173.05		$12,449,910.18	25
										26
										27
-	$ -	$ -	$ 113,884.02	$ 293.45	$ 248.33	$ 399.15	$ 718.49		$ 115,868.44	28
										29
										30
765.17	$ 303,706.66	$ 9,872.98	$ 880,455.01	$ 180,878.43	$ 378,878.99	$ 84,973.38	$ 92,742.38		$ 119,034.18	31
										32
665.70	$4,609,313.01	$40,288,441.28	$1,246,080.80	$2,084,690.27	$1,003,846.90	$1,872,976.20	$1,183,081.67		$74,069,218.83	33
										34

1869

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAILED STATEMENT OF ADDITIONS TO PLANT AND PROPERTY - GAS DEPARTMENT

FROM JULY 1, 1909 TO DECEMBER 31, 1923

Particulars	Six Months to Dec. 31, 1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1
GAS DEPARTMENT:											
Equipment-											
Pipe Line	$ 77,167.85	2,377,425.73	697,077.52	205,398.60	410,145.80	245,633.96	75,934.29	454,143.68	536,190.61	61,556.59	
Well Pipe	3,701.12	258,611.46	140,122.41	13,619.75	88,295.78	86,779.54	60,650.38	54,753.20	230,623.72	46,219.86	
Other Equipment	250.06	20,154.54	21,087.74	✗13,770.55	4,273.15	4,979.79	612,984.41	160,854.61	1,991,705.55	19,341.37	
Rights of Way	2,003.87	47,748.78	14,415.27	2,858.56	9,835.04	6,402.77	2,455.73	6,617.73	9,034.30	2,725.82	
Right of Way Expense	995.17	19,929.38	19,296.76	5,858.67	14,749.43	8,508.40	5,791.63	9,305.19	12,398.66	4,135.14	
Buildings	584.05	20,453.18	7,380.48	15,352.96	21,423.16	14,423.44	73,356.33	413.38	20,375.42	55,146.74	
Fittings	3,380.45	72,862.07	14,837.11	8,473.68	15,571.09	5,120.62	10,197.55	6,100.12	24,012.90	6,079.19	
Other Material	2,666.14	35,870.54	12,924.26	12,609.59	12,330.92	✗1,945.96	5,007.92	7,134.97	11,403.83	2,034.86	
Labor, Teaming and Freight	26,268.67	999,381.60	438,756.33	151,744.53	245,179.93	270,906.31	83,773.73	470,998.99	439,803.53	44,864.53	
Gas Receivers and Regulators	1,043.16	14,925.85	1,370.30	586.06	2,021.91	✗2,600.64	540.87	2,457.77	737.17	2,452.89	
Telegraph and Telephone Lines	30.79	29,878.30	7,577.16	15,128.99	13,002.86	4,093.05	166.13	✗1,637.83	32,595.85	4,050.11	
Office Furniture	1,328.37	12,703.78	3,995.37	5,000.26	3,776.09	2,203.91	✗994.06	5,025.55	1,029.37	1,859.48	
Tools over $25.00	106.16	4,800.14	✗440.32	✗909.83	5,114.61	99.16	42.74	825.10	2,563.39	1,439.69	
Natural Gas Meters	12,338.90	167,998.75	14,029.89	7,511.36	21,261.51	7,513.86	✗3,707.97	17,084.93	11,800.94	29,965.80	
Boilers and Engines	450.00	5,553.69	2,884.67	✗8,888.36	-	-	-	-	-	-	
Gas Compressing Stations	-	-	-	-	-	276,117.97	73,073.74	11,306.48	149,445.40	472,709.42	$
Pitot Tube Measuring Stations	-	8,138.97	1,056.06	293.08	4,208.99	12,498.71	13,963.60	4,721.65	19,227.45	14,045.52	
Service Lines	90.68	10,956.18	310.84	1,113.93	110,461.56	10,763.63	11,459.18	14,654.04	13,459.50	15,227.81	
Horses, Wagons and Automobiles	271.15	7,846.88	523.12	6,442.30	2,418.45	2,336.38	878.88	684.89	7,372.27	252.46	
Drilling Tools	-	41,631.31	✗5,577.33	✗893.72	5,814.57	1,861.84	7,818.93	1,370.39	40,134.68	✗1,704.54	
Financing Improvements and Betterments	-	-	-	-	-	-	-	118,449.56	74,973.88	-	
Cleaning Out Tools	-	-	-	20,041.20	1,873.53	✗6,218.63	✗5,800.49	786.72	6,132.82	8,728.58	
Drilling and Use of Rigs	-	341,136.39	1,197.40	-	-	-	✗342,333.79	-	-	-	
Miscellaneous	-	2,593.24	✗2,593.24	-	-	-	-	-	-	-	
Depreciation and Adjustment	-	-	-	-	-	-	-	266,453.93	489,880.09	267.16	
Total Equipment	$132,673.61	4,500,599.94	1,390,231.80	447,571.16	991,758.38	950,478.11	684,959.73	1,614,505.05	4,085,101.83	791,398.18	
Acreage-											
Operated	$ -	144,028.45	842,499.00	✗86,181.66	192,592.70	161,595.15	179,250.16	241,575.42	238,082.89	31,261.26	
Unoperated	16,215.21	5,095,122.50	809,582.23	128,115.22	✗170,840.95	✗250,648.34	✗203,729.39	18,195.78	✗269,058.94	✗169,867.28	
Total Acreage Acquired	$ 16,215.21	5,239,150.95	1,652,081.23	41,933.56	21,751.75	✗89,053.19	✗24,479.23	259,771.20	✗33,976.05	✗138,606.02	
Total Above	$148,888.82	9,739,750.89	3,042,313.03	489,504.72	1,013,510.13	861,424.92	660,480.50	1,874,276.25	4,051,125.78	652,792.16	
Acreage Added through Appraisal	-	-	-	-	-	-	-	-	-	32,124,303.20	
Total Gas Department	$148,888.82	9,739,750.89	3,042,313.03	489,504.72	1,013,510.13	861,424.92	660,480.50	1,874,276.25	4,051,125.78	32,777,095.36	

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SUBSIDIARIES

PROPERTY - GAS DEPARTMENT

31, 1923

1917	1918	1919	1920	1921	1922	1923	Total Additions to Dec. 31, 1923
536,190.61	61,556.59	59,883.15	90,465.54	327,055.28	84,150.51	182,763.27	5,884,992.38
230,625.74	46,219.86	28,023.91	116,230.62	105,340.00	29,409.78	99,340.03	1,361,921.56
951,705.55	19,341.37	33,262.63	340,189.03	241,787.72	91,377.18	399,530.78	5,788,008.01
9,034.30	2,725.82	1,956.01	1,850.00	5,771.54	2,640.04	3,503.05	119,818.51
12,398.66	4,135.14	1,534.65	1,282.41	6,848.51	4,279.60	6,336.99	121,220.49
20,375.42	55,146.74	35,834.58	52,755.68	✗16,504.29	16,006.26	11,682.88	328,684.22
24,012.90	6,079.19	4,897.49	6,840.29	6,813.52	5,519.10	7,299.47	200,004.65
11,403.83	2,034.86	2,039.30	2,448.63	3,847.36	2,812.25	5,454.12	116,638.73
439,003.53	44,864.53	41,064.47	90,479.84	220,526.63	67,471.67	114,233.57	3,705,451.43
737.17	2,452.59	2,162.08	816.20	764.14	1,034.53	1,910.80	30,222.81
32,595.85	4,050.11	4,494.40	2,244.19	✗ 269.48	304.01	266.23	111,924.76
1,029.37	1,859.48	1,111.29	2,107.35	274.21	1,077.90	2,158.08	42,656.92
2,563.39	1,439.69	✗192.62	✗ 94.00	880.54	1,859.67	1,124.94	17,219.37
11,800.94	29,965.80	32,813.13	66,759.86	42,845.08	35,806.46	36,107.46	499,829.96
-	-	-	-	-	-	-	-
149,445.40	472,709.42	577,202.73	612,274.91	330,691.91	212,761.19	172,857.84	2,888,441.59
19,227.45	14,045.52	1,890.95	24,582.95	1,873.22	6,825.07	5,087.16	118,413.38
13,459.50	15,227.81	24,306.53	23,284.52	32,893.25	28,206.71	33,405.41	330,563.74
7,372.27	282.46	2,198.81	10,389.19	✗ 2,275.27	✗4,489.20	3,668.54	38,518.52
40,134.68	✗1,704.54	12,343.09	✗15,621.76	✗ 8,387.88	✗ 6,645.15	✗ 218.98	71,625.45
74,973.88	-	1,250.00	-	-	-	1,054.14	195,727.58
6,132.82	8,728.58	141.13	5,863.90	4,385.63	8,129.16	5,628.27	50,391.82
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
489,880.09	267.16	-	-	-	-	-	756,601.18
085,101.83	791,396.18	868,217.71	1,434,789.35	1,304,861.62	888,836.74	993,194.05	20,778,876.76
238,082.89	31,261.26	43,717.38	64,791.12	18,000.65	✗169,301.26	110,483.88	2,009,395.14
269,050.94	✗169,867.28	✗92,468.10	28,283.58	✗170,015.46	✗ 21,626.40	✗20,734.52	4,723,525.14
✗33,976.08	✗138,606.02	✗48,750.72	90,074.70	✗152,014.81	190,927.66	89,749.36	6,732,920.28
,051,125.28	652,792.16	819,466.99	1,524,864.05	1,152,846.81	397,609.08	1,082,943.41	27,511,797.04
-	32,124,303.20	-	-	-	-	-	32,124,303.20
,051,125.28	32,777,095.36	819,466.99	1,524,864.05	1,152,846.81	397,609.08	1,082,943.41	59,636,100.24

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT OF GAS SOLD IN M. CUBIC FEET

BY RETAIL DISTRICTS AND WHOLESALE CONSUMERS

FROM JULY 1, 1909 TO DECEMBER 31, 1923

Line No.	Particulars	Six Months Ended December 31 1909	Year Ended December 1910	1911	1912	1913	1914	1915	1916	1917	1
(1)	RETAIL SALES:										
(2)	West Virginia-										
(3)	Charleston	1,017,323	3,328,315	3,864,070	6,819,123	4,821,146	3,940,946	4,000,362	4,851,604	6,612,836	7,
(4)	Huntington	409,267	1,464,452	1,461,881	1,704,677	1,586,748	1,423,992	968,636	1,005,421	1,166,195	1,
(5)	Williamson	-	-	-	-	-	131,682	155,604	186,765	210,734	
(6)	Spencer	-	-	-	-	1,286,124	848,666	572,998	804,021	772,737	
(7)	Miscellaneous	22,934	392,061	492,195	714,144	386,745	326,104	265,896	421,227	939,923	1,
(8)											
(9)	Total West Virginia	1,449,524	5,184,828	5,808,116	9,237,944	7,782,763	6,670,390	5,963,494	6,971,038	9,702,125	11,
(10)											
(11)	Ohio	970,799	3,254,932	3,422,823	4,200,846	4,455,694	3,914,043	5,143,107	6,683,166	6,393,151	8,
(12)	Kentucky	950,551	2,626,233	2,183,619	2,080,864	2,662,883	2,579,719	1,270,845	1,593,275	3,295,295	3,
(13)											
(14)	Total Retail Sales	3,370,874	11,066,993	11,384,458	15,519,354	14,871,340	13,164,152	12,377,446	15,247,479	19,393,571	16,
(15)											
(16)	WHOLESALE SALES:										
(17)	Columbia Gas and Electric Co.	-	4,001,355	7,452,831	7,190,127	6,322,986	6,068,130	6,422,776	8,191,870	10,256,018	8,
(18)	Ohio Fuel Supply Co.	-	3,005,935	3,964,642	4,663,416	5,045,974	6,952,662	6,846,418	10,002,914	10,943,059	11,
(19)	Central Kentucky Natural Gas Co.	-	-	-	108,049	858,929	968,761	974,238	1,149,809	1,191,654	1,
(20)	Louisville Gas and Electric Co.	-	-	-	-	-	929,615	1,673,253	2,200,293	2,551,008	2,
(21)	Portsmouth Gas Company	306,455	937,365	923,257	1,120,005	1,032,371	1,199,838	1,179,089	1,444,868	1,775,318	1,
(22)	Hope Natural Gas Co.	-	166,663	-	-	-	-	-	-	6,148,788	7,
(23)	Pittsburg and West Virginia Natural Gas Co.	-	-	-	-	-	-	-	-	6,327,523	7,
(24)	Montgomery Gas Co.	-	-	-	-	-	-	-	-	-	
(25)	Industrial Gas Co.	-	-	-	-	-	-	-	-	-	
(26)	All Others	-	-	-	-	-	-	121,462	1,053,213	23,927	
(27)											
(28)	Total Wholesale Sales	306,455	8,111,218	12,340,730	13,101,596	13,260,260	16,118,993	17,217,227	24,042,967	41,217,295	40
(29)											
(30)	Total Sales	3,677,329	19,177,211	23,725,188	28,620,950	28,131,600	29,283,145	29,594,673	39,290,446	60,610,866	57
(31)											

...SHIPPING...

...C EAST

...CONSUMERS

...1923

...d ... D e c e m b e r ... 3 1

1916	1917	1918	1919	1920	1921	1922	1923	Total	Line No.
									(1)
									(2)
4,691,504	6,612,036	7,949,868	7,918,963	8,429,990	6,167,076	6,164,447	6,955,179	62,830,663	(3)
1,006,421	1,166,195	1,198,961	1,401,979	1,673,362	1,502,976	1,880,424	2,613,146	21,512,087	(4)
180,765	810,734	226,792	283,504	304,813	295,950	313,966	343,282	2,429,097	(5)
804,021	772,737	613,644	871,106	843,437	422,948	319,128	298,816	6,783,833	(6)
421,227	939,923	1,135,575	1,198,677	1,574,597	1,514,814	1,474,743	1,466,226	12,289,861	(7)
6,971,036	9,702,125	11,124,837	11,838,229	12,826,199	9,953,771	10,152,708	11,676,649	125,811,331	(8)
									(9)
6,663,166	6,393,151	2,360,561	1,220,629	2,613,624	1,381,157	2,146,677	1,509,750	49,678,589	(10)
1,093,278	3,296,296	3,203,371	2,763,281	3,736,214	1,847,370	2,573,333	3,243,893	36,583,946	(11)
10,247,479	19,393,571	16,696,489	15,322,139	18,876,037	13,182,298	14,872,918	16,429,288	211,773,836	(12)
									(13)
8,191,870	10,256,018	8,570,202	7,301,647	10,313,994	7,464,572	9,412,164	9,785,968	106,782,634	(14)
10,003,914	10,943,089	11,000,964	9,455,426	8,634,633	6,558,874	7,841,268	7,627,205	103,263,381	(15)
1,149,809	1,191,654	1,379,850	1,668,596	1,519,962	1,776,629	1,901,323	1,838,383	14,629,120	(16)
2,200,293	2,991,008	2,601,884	2,704,920	2,637,474	2,829,629	2,270,388	1,027,391	21,125,482	(17)
1,444,868	1,775,318	1,766,074	1,439,088	1,821,361	1,135,679	1,191,212	1,277,742	16,279,556	(18)
-	8,148,786	7,227,560	7,461,440	4,213,906	5,337,561	3,841,636	4,416,703	40,814,247	(19)
-	6,327,523	7,270,321	6,822,967	4,073,210	3,967,166	5,772,484	4,080,135	37,691,700	(20)
-	-	-	-	-	24,774	97,665	129,614	251,993	(21)
-	-	-	-	-	41,655	63,542	-	105,197	(22)
1,083,213	23,927	22,402	74,083	-	-	3,004	7,900	1,705,961	(23)
24,042,967	41,217,295	40,338,687	36,328,136	32,919,420	28,636,523	34,994,593	30,006,171	346,220,241	(24)
39,290,446	60,610,866	57,038,148	51,650,275	51,795,457	42,018,821	46,867,511	46,435,459	557,994,077	(25)

JIBGAL EO. 7 CORRECTED

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT SHOWING SOURCE AND APPLICATION OF FUNDS

FROM JANUARY 1, 1931 TO DECEMBER 31, 1935

SOURCE OF FUNDS:				
From Capital Sources-				
Net Increase in Funded Debt			$ 3,881,427.10	
Less- Discount and Expense in connection therewith			308,662.43	$ 3,318,764.67
From Earnings-				
Surplus Net Income before Depletion, Depreciation and Federal Income Taxes			$30,811,780.26	
Add Back-				
Cost of Drilling Wells Charged to Expense	$1,763,563.83			
Abandoned Leases Charged to Expense	809,310.08			
Sinking Fund Appropriations	1,747,480.63			
Sale of Malley Oil and Development Company Stock	370,000.00	$ 4,690,354.54		
Deduct-				
Federal Income Taxes	$4,958,689.04			
Surplus Adjustments (Net)	X 876,548.50	4,376,134.38	314,220.16	30,536,000.42
Total Funds Provided				$33,854,765.09
APPLICATION OF FUNDS:				
For Capital Purposes-				
Increase in Plant, Property, Rights, Franchises, Etc.		$30,569,858.82		
Less- Adjustments		938,358.76		
		$29,617,550.06		
Less- Capital Surplus Created through Appraisal		11,571,629.47	$18,046,980.79	
Property Retirements during Period			3,035,242.04	$21,142,182.83
Increase in Investments				1,424,101.19
Total Expended for Capital Purposes				$22,566,284.02
For Surplus and Reserve Purposes-				
Cash Dividends Declared and Paid				88,084,900.00
Balance- Represented by Increase in Working Capital-				
Increase in Current Assets			$ 3,161,980.41	
Increase in Deferred Charges and Prepaid Accounts			221,288.98	
			$ 3,383,247.33	
Less- Increase in Current Liabilities			128,646.26	3,254,601.07
Total as above				$33,844,765.09

(X Denotes red in copy.)

1972

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING NET EARNINGS OF GASOLINE DEPARTMENT AND RATIO OF SAME TO GASOLINE INVESTMENT

JIRGAL EX. NO. 8

Particulars	Year Ended December 31 1916	1917	1918	1919	1920	1921	1922	1923
GROSS EARNINGS	$370,900.17	$1,916,946.48	$2,320,701.77	$2,894,409.38	$3,614,510.10	$2,756,084.14	$3,053,300.33	$3,013,860.53
OPERATING EXPENSES AND ORDINARY TAXES:								
Manufacturing Costs-								
Labor and Teaming		$ 68,240.49	$ 88,648.75	$ 107,084.52	$ 167,141.30	$ 158,332.50	$ 158,824.21	$ 174,179.83
Fuel		41,534.16	40,283.98	43,389.31	52,854.51	53,368.62	65,108.99	61,850.14
Mineral Seal Oil		31,569.02	42,584.73	52,941.54	84,082.67	34,465.01	26,894.20	26,706.48
Other Supplies		15,324.29	16,180.04	16,942.96	20,144.93	19,451.91	17,532.40	19,799.17
Maintenance Labor		9,631.27	29,213.42	17,427.20	41,929.95	29,405.07	26,850.26	21,754.69
Maintenance Material		4,654.14	9,442.51	17,170.82	23,755.91	14,259.98	16,086.85	16,336.73
Total Manufacturing Costs		$ 170,953.37	$ 226,353.43	$ 254,956.35	$ 389,909.27	$ 309,283.09	$ 313,296.89	$ 320,627.04
	$ 71,606.72							
Other Expense-								
Freight on Gasoline		$ 149,623.13	$ 79,374.79	$ 126.90	$ 624.86	$ -	$ -	$ 347,396.02
Use of Tank Cars		3,677.49	36,871.69	16,388.05	-	-	-	-
Royalty		62,125.00	79,223.79	93,487.80	105,760.17	* 56,560.85	* 3,088.36	9,631.68
Rent and Interest		6,295.84	7,835.67	8,952.20	17,142.52	17,709.15	21,305.85	23,103.26
Guard Duty		5,283.67	2,841.39	-	-	-	-	-
Use of Gas		-	2,035.37	10,524.98	22,438.37	24,463.31	28,916.28	24,031.69
Insurance		-	-	-	-	-	12,851.50	11,059.22
Miscellaneous		-	732.47	-	-	-	-	-
Total Other Expense		$ 227,005.13	$ 210,914.97	$ 129,479.93	$ 145,965.92	$ 98,733.31	$ 66,161.99	$ 415,221.87
Total Above	$ 71,606.72	$ 397,958.50	$ 437,268.40	$ 384,436.28	$ 535,875.19	$ 408,036.40	$ 379,458.88	$ 735,848.91
General Expenses (Apportioned)	7,127.61	33,937.41	35,212.27	29,620.89	38,208.83	33,538.59	46,307.50	70,637.42
Taxes (Other than Federal Income Taxes)	2,605.30	4,423.66	6,262.36	10,124.80	14,928.36	17,832.50	29,897.05	40,537.29
Total Operating Expenses and Ordinary Taxes	$ 81,339.63	$ 436,319.57	$ 478,743.03	$ 424,181.97	$ 589,009.38	$ 459,404.49	$ 455,663.43	$ 847,023.62
Net Earnings before Depreciation and Federal Income Taxes	$288,560.34	$1,482,620.91	$1,881,958.74	$2,470,227.41	$3,025,500.72	$2,296,679.65	$2,597,636.90	$2,166,836.91
DEDUCTIONS:								
Depreciation	$ 27,998.08	$ 43,767.89	$ 82,599.96	$ 78,297.00	$ 93,834.73	$ 98,985.22	$ 107,348.38	$ 116,739.73
Federal Income Taxes (Estimated)	5,210.00	114,960.00	214,320.00	237,658.00	291,080.00	196,520.00	286,877.11	181,310.36
Total Deductions	$ 33,208.08	$ 187,727.89	$ 296,919.96	$ 282,952.00	$ 384,914.73	$ 297,505.22	$ 394,225.46	$ 298,050.09
Net Earnings	$255,352.26	$1,324,893.02	$1,583,038.78	$2,207,275.41	$2,640,585.99	$1,999,174.43	$2,203,411.44	$1,868,786.82
50% OF NET EARNINGS APPORTIONED TO GAS DEPARTMENT	$127,676.13	$ 662,446.51	$ 791,519.38	$1,103,637.71	$1,320,293.00	$ 999,587.22	$1,101,705.72	$ 934,393.41
Net Earnings Applicable to Gasoline Investment	$127,676.13	$ 662,446.51	$ 791,519.38	$1,103,637.70	$1,320,292.99	$ 999,587.21	$1,101,705.72	$ 934,393.41
GASOLINE INVESTMENT AT END OF YEAR	$279,960.77	$ 437,678.87	$ 525,999.83	$ 752,970.03	$ 938,347.34	$ 989,852.22	$1,073,483.50	$1,167,397.25
PER CENT OF RETURN EARNED	45.60	151.36	150.46	146.57	140.70	100.98	102.63	80.40

* Royalties Adjusted.

JINGAL EX. NO. 9

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF REVENUES AND EXPENSES - GASOLINE DEPARTMENT

FOR THE YEAR ENDED OCTOBER 31, 1924

Particulars	November 1923		December 1923		Ten Months Ended October 31, 1924		
	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Year Ended Oct. 31, 1924
GROSS EARNINGS	$58,942.22	$ 2,420.91	$41,313.49	$ 2,346.12	$1,907,509.63	$ 32,909.06	$2,439,441.43
OPERATING EXPENSES AND ORDINARY TAXES:							
Manufacturing Costs-							
Labor, Teaming and Freight	$ 13,897.33	$ 398.11	$ 13,993.20	$ 387.85	$ 198,857.95	$ 4,669.58	$ 161,904.02
Fuel	5,376.84	-	9,744.85	-	82,066.24	-	63,187.63
Mineral Seal Oil	2,546.22	13.70	2,650.19	-	16,404.03	19.05	21,633.32
Other Supplies	2,769.18	36.19	1,499.60	33.42	16,664.49	286.76	20,289.64
Maintenance Labor	1,947.65	48.86	2,650.54	26.56	15,219.40	453.20	20,345.91
Maintenance Material	1,274.82	18.28	1,145.25	23.57	10,430.90	233.93	15,186.75
Total Manufacturing Costs	$ 26,812.04	$ 514.84	$ 27,683.43	$ 471.40	$ 339,343.01	$ 5,662.56	$ 300,487.27
Other Expenses-							
Freight on Gasoline	$ 53,319.74	$ 340.15	$ 54,545.24	$ 338.58	$ 370,675.76	$ 5,766.69	$ 485,186.16
Rent and Interest	1,982.58	-	2,190.70	-	13,334.97	-	17,488.08
Use of Gas	1,637.70	-	1,774.18	-	14,766.57	-	18,180.26
Insurance	803.48	12.59	836.31	18.87	7,384.12	192.98	9,268.05
Total Other Expenses	$ 57,743.30	$ 352.74	$ 59,346.43	$ 357.15	$ 406,163.42	$ 5,959.67	$ 530,122.51
General Expenses	$ 6,263.21	$ 330.75	$ 6,263.18	$ 177.41	$ 58,876.20	$ 4,425.78	$ 66,338.53
Taxes	1,373.78	692.00	10,804.68	406.59	38,759.86	3,994.87	55,021.22
Total	$ 7,636.99	$ 1,024.75	$ 3,941.50	$ 584.00	$ 107,636.06	$ 8,420.65	$ 121,360.75
Total Operating Expenses and Ordinary Taxes	$ 92,192.33	$ 1,892.33	$ 83,088.36	$ 1,612.55	$ 783,143.09	$ 20,042.87	$ 951,970.53
Net Earnings Before Depreciation and Federal Income Taxes	$150,749.89	$ 528.58	$158,225.13	$ 733.57	$1,124,367.54	$ 12,866.19	$1,487,470.90
DEDUCTIONS:							
Depreciation	$ 11,777.61	$ -	$ 11,777.61	$ -	$ 117,776.10	$ -	$ 141,331.32
Federal Income Taxes	15,000.00	-	15,000.00	-	101,454.05	-	121,454.08
Total Deductions	$ 26,777.61	$ -	$ 26,777.61	$ -	$ 219,230.15	$ -	$ 262,785.40
Net Earnings	$123,972.28	$ 528.58	$131,447.52	$ 733.57	$ 939,137.39	$ 12,866.19	$1,214,685.50
50% OF NET EARNINGS APPLICABLE TO GAS DEPARTMENT	$ 66,986.14	$ 264.29	$ 65,723.76	$ 366.79	$ 467,568.68	$ 6,433.10	$ 607,342.76
Net Earnings Applicable to Gasoline Department	$ 66,986.14	$ 264.29	$ 65,723.76	$ 366.79	$ 467,568.68	$ 6,433.10	$ 607,342.76

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JINSAL EX. NO. 94

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF REVENUES AND EXPENSES - GASOLINE DEPARTMENT

FOR THE YEAR ENDED DECEMBER 31, 1924

Particulars	Ten Months Ended October 31, 1924			November 1924	December 1924	Year Ended Dec. 31, 1924
	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Total			
GROSS EARNINGS	$1,907,509.63	$32,909.06	$1,940,418.69	$133,428.50	$179,787.11	$2,253,634.30
OPERATING EXPENSES AND ORDINARY TAXES:						
Manufacturing Costs and Other Expenses	$ 648,506.23	$11,622.22	$ 667,128.45	$ 69,067.02	$ 76,893.51	$ 803,088.98
General Expense	60,676.20	4,425.78	73,301.98	6,140.77	5,929.92	85,372.67
Taxes	36,789.66	3,994.87	42,784.53	1,848.27	874.15	45,476.95
Total Operating Expenses and Ordinary Taxes	$ 783,142.09	$20,042.87	$ 773,184.96	$ 77,056.06	$ 83,697.58	$ 933,938.60
Net Earnings before Depreciation and Federal Income Taxes	$1,184,367.54	$12,866.19	$1,167,233.73	$ 56,372.44	$ 96,089.53	$1,319,695.70
DEDUCTIONS:						
Depreciation	$ 117,776.10	$ -	$ 117,776.10	$ 11,777.61	$ 11,777.61	$ 141,331.32
Federal Income Taxes	101,454.08	-	101,454.08	3,214.22	7,588.76	112,254.06
Total Deductions	$ 219,230.18	$ -	$ 219,230.18	$ 14,991.83	$ 19,363.37	$ 253,585.38
Net Earnings	$ 938,137.36	$12,866.19	$ 946,003.55	$ 41,380.61	$ 76,726.16	$1,066,110.32
50% OF NET EARNINGS APPORTIONED TO GAS DEPARTMENT	467,568.68	6,433.10	474,001.78	20,690.31	38,363.08	533,055.17
Net Earnings Applicable to Gasoline Department	$ 467,568.68	$ 6,433.10	$ 474,001.77	$ 20,690.30	$ 38,363.08	$ 533,055.15

[fol. 1413a]

JUDICIAL EXHIBIT 3 J. C. No. 1

United Fuel Gas Company, Inc., and Subsidiaries

Statement Showing Distribution of Net Earnings (Before and After Considering Delayed Rentals) When Gas to Parent Companies is Valued on City Gate Prin
for Depreciation and Amortization is Computed on Original Cost of the Property for the Year Ended December 31, 1923

Particulars	Basis of apportionment	City of Charleston	City of Huntington	City of Williamson	Other West Virginia	Total West Virginia	Kentucky and Ohio
Gross Earnings per Books:							
Revenues from Sale of Gas	Direct	$1,110,919	$546,948	$81,678	$571,406	$2,310,951	$1,524,867
Miscellaneous Operating and Non-operating Revenues	Overhead on Revenues	3,788	1,866	279	1,947	7,880	5,202
Total Gross Earnings per Books		$1,114,707	$548,814	$81,957	$573,353	$2,318,831	$1,530,069
Add:							
50% of Gasoline Net Revenues	Sales	116,145	52,513	6,914	59,054	234,626	95,495
Adjustment of Parent Company Revenue (City Gate Rate Principle)	Direct						
Adjusted Gross Earnings		$1,230,852	$601,327	$88,871	$632,407	$2,553,457	$1,625,564
Operating Expenses and Taxes (including Income Taxes):							
Gas Purchased	Sales	$76,974	$34,803	$4,583	$39,137	$155,497	$63,289
Production	Sales	141,657	64,047	8,433	72,025	286,162	116,471
Transmission	System Demand Mileage	41,106	47,707	6,601	28,924	124,338	96,313
Distribution	Direct	48,452	24,251	2,807	25,688	101,228	57,966
Commercial	Direct	30,406	24,637	4,325	26,947	86,315	35,925
General and Inter Departmental	Overhead on Expenses	26,652	15,384	2,121	15,177	59,334	29,126
Total Above Items		$365,247	$210,829	$28,900	$207,898	$812,874	$399,090
Taxes (Ordinary)	Property	57,408	38,599	4,962	29,740	130,739	65,609
Taxes (Federal Income)	Taxable Income	19,000	8,264	1,292	9,280	37,836	27,302
Profit and Loss Adjustments	Overhead on Expenses	2,082	1,202	166	1,185	4,635	2,275
Total Operating Expenses and Taxes		$443,797	$258,894	$35,320	$248,103	$986,084	$494,276
Net Earnings Available for Depreciation, Amortization and Return		$787,055	$342,433	$53,581	$384,304	$1,567,373	$1,131,288
Deduct—Depreciation and Amortization on Original Cost Basis	Property	167,907	112,778	14,412	86,892	381,989	191,694
Net Earnings after Depreciation and Amortization		$619,148	$229,655	$39,169	$297,412	$1,185,384	$939,594
Add Back—Delayed Rentals on Unoperated Leaseholds and Leasehold Expense	Sales	73,236	33,112	4,360	37,237	147,945	60,215
Net Earnings Available for Return		$692,384	$262,767	$43,529	$334,649	$1,333,329	$999,809
Net Earnings Before Adding Back Delayed Rentals, etc.:							
Capitalized at 9%					8%	14,817,000	
Capitalized at 10%						$13,171,000	
Net Earnings After Adding Back Delayed Rentals, etc.:						11,854,000	
Capitalized at 9%					8%	16,666,000	
Capitalized at 10%						14,815,000	
						13,333,000	

JUDGE EXHIBIT 3 J. C. No. 1

United Fuel Gas Company, Inc., and Subsidiaries

f Net Earnings (Before and After Considering Delayed Rentals) When Gas to Parent Companies is Valued on City Gate Principle and When the Amount for Depreciation and Amortization is Computed on Original Cost of the Property for the Year Ended December 31, 1923

	Basis of apportionment	City of Charleston	City of Huntington	City of Williamson	Other West Virginia	Total West Virginia	Kentucky and Ohio	Wholesale service	Total for natural gas service
Non-operating Revenues	Direct	$1,110,919	$546,948	$81,678	$571,406	$2,310,951	$1,524,867	$3,863,003	$7,698,821
	Overhead on Revenues	3,788	1,8[illegible]	279	1,947	7,880	5,202	18,273	31,355
er Books		$1,114,707	$548,814	$81,957	$573,353	$2,318,831	$1,530,069	$3,881,276	$7,730,176
s	Sales	116,145	52,513	6,914	59,054	234,626	95,495	604,273	934,394
ny Revenue (City Gate	Direct							1,495,497	1,495,497
gs		$1,230,852	$601,327	$88,871	$632,407	$2,553,457	$1,625,564	$5,981,046	$10,160,067
cluding Income Taxes):									
	Sales	$76,974	$34,803	$4,583	$39,137	$155,497	$63,289	$400,478	$619,264
	Sales	141,657	64,047	8,433	72,025	286,162	116,471	737,001	1,139,634
	System Demand Mileage	41,106	47,707	6,601	28,924	124,338	96,313	379,433	600,084
	Direct	48,452	24,251	2,837	25,688	101,228	57,966		159,194
	Direct	30,406	24,637	4,325	26,947	86,315	35,925		122,240
tal	Overhead on Expenses	26,652	15,384	2,121	15,177	59,334	29,126	119,436	207,896
		$365,247	$210,829	$28,900	$207,898	$812,874	$399,090	$1,636,348	$2,848,312
	Property	57,468	38,599	4,932	29,740	130,739	65,609	282,559	478,898
	Taxable Income	19,000	8,264	1,292	9,280	37,836	27,302	247,208	312,346
	Overhead on Expenses	2,082	1,202	166	1,185	4,635	2,275	9,331	16,241
es and Taxes		$443,797	$258,894	$35,290	$248,103	$986,084	$494,276	$2,175,437	3,655,797
ble for Depreciation,									
turn		$787,055	$342,433	$53,581	$384,304	$1,567,373	$1,131,288	$3,805,609	$6,504,270
ation on Original Cost									
	Property	167,907	112,778	14,412	86,892	381,989	191,694	825,544	1,399,227
preciation and Amortiza-									
		$619,148	$229,655	$39,169	$297,412	$1,185,384	$939,594	$2,980,065	$5,105,043
Unoperated Leaseholds									
	Sales	73,236	33,112	4,360	37,237	147,945	60,215	381,026	589,186
le for Return		$692,384	$262,767	$43,529	$334,649	$1,333,329	$999,809	$3,361,091	$5,694,229
ck Delayed Rentals, etc.:					8%	14,817,000		8%	63,813,000
						$13,171,000			$56,723,000
						11,854,000			51,050,000
Delayed Rentals, etc.:					8%	16,666,000		8%	71,177,000
						14,815,000			63,269,000
						13,333,000			56,942,000

[f. d. 1413b]

JUDICIAL EXHIBIT 3 J. C. No. 2

United Fuel Gas Company, Inc., and Subsidiaries

Statement Showing Distribution of Net Earnings (Before and After Considering Delayed Rentals) When Gas to Parent Companies is Valued on Basis of Amount Paid by Comparable Companies and When Amount for Depreciation and Amortization as Set Forth in Commission's Findings are Accepted for the Year Ended December 31, 1923

Particulars	Basis of apportionment	City of Charleston	City of Huntington	City of Williamson	Other West Virginia districts	Total West Virginia	Kentucky and Ohio	Wholesale service	Total for natural gas service
Gross Earnings per Books:									
Revenues from Sale of Gas	Direct	$1,110,919	$546,948	$81,678	$571,406	$2,310,951	$1,524,867	$3,863,003	$7,698,821
Miscellaneous Operating and Non-operating Revenues	Overhead on Revenues	3,788	1,866	279	1,947	7,880	5,202	18,273	31,355
Total Gross Earnings per Books		$1,114,707	$548,814	$81,957	$573,353	$2,318,831	$1,530,069	$3,881,276	$7,730,176
Add:									
50% Gasoline Net Revenues	Sales	116,145	52,513	6,914	59,054	234,626	95,495	604,273	934,394
Adjustment of Parent Company Revenue (on basis of Commission's Decision)	Direct							2,143,661	2,143,661
Adjusted Gross Earnings		$1,230,852	$601,327	$88,871	$632,407	$2,553,457	$1,625,564	$6,629,210	$10,808,231
Operating Expenses and Taxes:									
Gas Purchased	Sales	$76,974	$34,803	$4,583	$38,137	$155,497	$63,289	$400,478	$619,264
Production	Sales	141,657	64,047	8,433	72,025	286,162	116,471	737,001	1,139,634
Transmission	System Demand Mileage	41,106	47,707	6,601	28,924	124,338	96,313	379,433	600,084
Distribution	Direct	48,452	24,251	2,837	25,688	101,228	57,966		159,194
Commercial	Direct	30,406	24,637	4,325	26,947	86,315	35,925		122,240
General and Inter-Departmental	Overhead on Expenses	26,652	15,384	2,121	15,177	59,334	29,126	119,436	207,896
Total Above Items		$365,247	$210,829	$28,900	$207,898	$812,874	$399,090	$1,636,348	$2,848,312
Taxes (Ordinary)	Property	57,468	38,599	4,932	29,740	130,739	65,609	282,550	478,898
Taxes (Federal Income)	Taxable Income	19,000	8,264	1,292	9,280	37,836	27,302	328,228	393,366
Profit and Loss Adjustments	Overhead on Expenses	2,082	1,202	166	1,185	4,635	2,275	9,331	16,241
Total Operating Expenses and Taxes		$443,797	$258,894	$35,290	$248,103	$986,084	$494,276	$2,256,457	$3,736,817
Net Earnings Available for Depreciation, Amortization and Return		$787,055	$342,433	$53,581	$384,304	$1,567,373	$1,131,288	$4,372,753	$7,071,414
Deduct—Depreciation and Amortization on Cost of Reproduction Basis	Property	227,944	153,103	19,565	117,961	518,573	260,237	1,120,727	1,899,537
Net Earnings after Depreciation and Amortization		$559,111	$189,330	$34,016	$266,343	$1,048,800	$871,051	$3,252,026	$5,171,877
Add Back—Delayed Rentals on Unoperated Leaseholds and Leasehold Expenses	Sales	73,236	33,112	4,360	37,237	147,945	60,215	381,026	589,186
Net Earnings Available for Return		$632,347	$222,442	$38,376	$303,580	$1,196,745	$931,266	$3,633,052	$5,761,063
Net Earnings Before Adding Back Delayed Rentals, etc.:					8%	13,110,000		8%	64,649,000
Capitalized at 9%						$11,653,000			$57,465,000
Capitalized at 10%						10,488,000			51,719,000
Net Earnings After Adding Back Delayed Rentals, etc.:					8%	14,959,000		8%	72,013,000
Capitalized at 9%						13,297,000			64,012,000
Capitalized at 10%						11,967,000			57,611,000

[fol. 1876] HAGENAH EXHIBIT No. 1

[fol. 1877] Hagenah & Erickson, First National Bank Building, Chicago

William J. Hagenah, Halford Erickson, Victor A. Dorszeski

Appraisals, Cost Analyses, Rate Studies, Financial Investigations

November the Fifth, 1924.

Mr H. D. Rummel, City Solicitor, Charleston, West Virginia.

DEAR SIR: Pursuant to your instructions, I have made an analysis of the inventory and appraisal report covering the property of the United Fuel Gas Company as of December 31, 1923, as made by Messrs. Ford, Bacon & Davis, and submit herewith my conclusions.

My investigation embraced a check of the inventory and analysis of the costs contained in the above report. The inventory check was made by following the same course adopted by the company's engineers, my attention, however, being confined to sections of the major accounts selected at random. The unit costs were analyzed in detail, first by a check against the actual costs incurred for similar work by the company under conditions fairly comparable, and also by inquiries of manufacturers, jobbers and contractors as to labor and material prices prevailing in the territory in question as of the appraisal date. In like manner, a study was made of other features of the report, such as the appraisal of the natural gas lands and leaseholds, the allowance for working capital, the provision for overhead charges and the deduction from the reproduction cost new to reflect the measure of depreciation.

The inventory was found to be correct and it appears to have been prepared with thoroughness and regard for detail in all important respects. The unit costs also fairly reflect the cost of reproducing the property on the level of labor and material prices on which such estimates were based. The allowance for working capital was checked against the company's books and is believed to be conservative.

Regarding some aspects of the case, I am inclined to take issue with the report. The appraisal results covering the gas reserve are excessive and have been arrived at by the company's engineers through the use of a theory of valuation which has no application in the appraisal of natural gas properties. A study of the facts as set [fol. 1878] forth in the report above referred to and also other data submitted by the United Fuel Gas Company shows that the book cost of the natural gas lands, leaseholds and rights as set forth in the accounting report prepared by Mr. Jurgal is more nearly correct and proper, and for that reason such cost has been included in the summary attached hereto. The provision for overhead charges included in the appraisal is also excessive. Because of the substantial provision made for sundry items of overhead expenses in the unit costs, the allowance for general overhead charges should not exceed 18 per cent, and this provision is included in the attached summary.

Adjustment has also been made in the per cent condition of the property because the deduction for depreciation set forth in the report by Ford, Bacon & Davis was made without regard to the facts developed by the same engineers in other parts of their report. Obviously, the useful life of a large part of the company's property is limited to the life of the natural gas fields, which latter period the engineers have found to be approximately 18 years. The per cent condition of the property was determined by the above engineers from an inspection of the physical property, in which consideration was apparently given only to its actual physical condition as of the inventory date. This method ignores the limitation on the use of the property which the life of the field imposes, with the result that since the investment must be amortized over the life of such field, the present worth of the property affected thereby should be determined with regard to such diminishing value, especially when such loss in worth is being met through operating charges. Because of this fact the ordinary rules for determining the measure of depreciation by inspection do not apply. The inspection method in this instance applies only to those items of property whose normal expectancy of life in service is at this time less than eighteen years and which must therefore be replaced before the exhaustion of the field. However, in respect to those items or classes of property whose reasonable expectancy extends beyond the 18 year period, the extent of depreciation cannot be determined by the inspection method, but must be ascertained through the application of the amortization principle.

In order to apply the above rules to the appraisal in question, a study was made of the company's records to ascertain the age of each major unit of property and the average age of each such group, from which data the present worth was determined. The following example is submitted as an illustration of the above method [fol. 1879]. Assume that the age of a unit of property is 10 years and that its normal expectancy is not in excess of another 10 years, making its probable life 20 years. In this instance the inspection method is deemed proper for the replacement is here unaffected by the life of the field and the per cent condition determined by Ford, Bacon & Davis should therefore be accepted. Where, however, a unit of property is found to be 9 years old at this time and its future life is limited by the life of the field, namely, 18 years, the total life of this unit or class of property must, for the purpose of this case, be the sum of these two amounts, or 27 years. Since one-third of this term has already expired, the remaining property is in 66.6 per cent condition, for no replacement of the unit will be necessary and the investment will have been restored to the owners on the exhaustion of the field through the operation of the depreciation or amortization charges. To apply the inspection method in this instance, where the physical condition may reasonably be 90 per cent, would result in a charge against the public for the gradual retirement of the property over 18 years with such capital being returned to the owners for investment elsewhere, while the return on practically the full reproduction cost is being included in the operating expenses of this utility for such entire period. This clearly results in a duplication of cost

In the appraisal summaries attached hereto there is shown in each instance the method by which the per cent condition was ascertained. In all cases where the normal life of the property will be cut short by the exhaustion of the gas reserves the per cent condition has been ascertained by the application of the amortization rule, but in all other instances the facts as found by Ford, Bacon & Davis have been accepted. This course has been followed for the entire property, regardless of the state in which it is located.

The application of the above rule is also important as affecting the present value of the local distribution systems. In the large cities, such as Charleston and Huntington, the exhaustion of the natural gas fields will not mean the loss of the investment in mains and services laid for meeting domestic and commercial demands. These cities will be supplied by artificial gas plants and the present distribution systems are adapted to such use. For this reason their present value should be determined by the inspection method, as was followed by the company's engineers. In many small cities now served with natural gas the available business would not warrant the con-[fol. 1880] struction of an artificial gas plant and consequently the present value of the distribution systems now devoted to this service must be ascertained through the application of the amortization rule. The following cities are considered of sufficient importance to be supplied with artificial gas on the exhaustion of the natural gas reserves, the distribution systems in the other communities having been depreciated on the basis of an 18 year remaining life:

West Virginia	Kentucky	Ohio
Charleston,	Ashland,	Ironton,
South Charleston,	Catlettsburg	New Boston,
Huntington,		Portsmouth.
Kenova,		
Logan,		
Spencer,		
Williamson.		

The present value of all meters, regulators and accessory property must be determined by the inspection method, and the findings of Ford, Bacon & Davis pertaining thereto have been accepted.

Attached hereto is a condensed report setting forth in summary form the adjustments above described as applied to the report made by Ford, Bacon & Davis. The reproduction cost new and such reproduction cost less the existing depreciation, on the basis herein set forth, as of December 31, 1923, were $43,114,072 and $31,692,100, respectively. These conclusions are in each case exclusive of any provision, directly or indirectly, for going concern value.

Respectfully submitted, Wm. J. Hagenah.

United Fuel Gas Company

Summary of Appraisal as of December 31, 1923

Account number	Classification	Reproduction cost new	Present value
	Production System Property		
204–5–7	Land, Leaseholds and Natural Gas Rights*	$6,732,920	$6,732,920
206	Rights of Way	111,454	111,454
208	Gas Well Structures	59,360	44,520
209	Field Measuring Station Structures	4,919	4,379
210	Other Production System Structures	111,759	70,955
211	Gas Well Construction	5,869,386	2,699,917
212	Gas Well Equipment	2,156,587	1,470,733
213	Field Line Construction	1,244,603	839,667
214	Field Line Equipment	2,658,379	1,864,552
215	Field Measuring Station Equipment	41,360	32,177
216	Drilling and Cleaning Equipment	204,030	142,822
217	Other Production System Equipment	33,035	28,079
	Total	19,227,792	14,042,175
	Incomplete Construction	80,639	80,639
	Total	19,308,431	14,122,814
	Transmission System Property		
218	Land	3,533	3,533
220	Rights of Way	159,713	159,713
221	Compressor Station Structures	3,513,915	2,815,933
224	Compressor Station Equipment		

222	Transmission System Measuring Station Structures	26,258	17,619
225	Transmission System Measuring Station Equipment		
223	Other Transmission System Structures	212,610	165,980
226	Transmission System Equipment	9,520,856	6,524,313
227	Other Transmission System Equipment	35,235	29,950
	Total	13,472,120	9,717,032
	Incomplete Construction	3,635†	3,635†
	Total	13,468,485	9,713,397
	Distribution System Property		
228	Land	45,161	45,161
230	Rights of Way	4,891	4,891
231	District Regulator Structures	34,962	27,540
232	Other Distribution Structures	39,635	30,863
233	Gas Receivers and District Regulators	69,499	59,074
234	Distribution Line Equipment	1,768,976	1,372,773
235	Service Line Equipment	547,023	447,863
236	Meters		
237	Meter Installations	742,346	631,012
239	Other Distribution System Equipment	15,692	12,910
	Total	3,268,185	2,632,087
	Incomplete Construction	1,181	1,181
	Total	3,269,366	2,633,268

*Book cost as per Jirgal's report.
[†Red in copy.]

[fol. 1882]

Summary of Appraisal as of December 31, 1923—Continued

Account number	Classification	Reproduction cost new	Present value
	General Property		
244	General Office Land	$174,500	$174,500
245	Other General Land	31,653	31,653
247	General Office Structures	144,587	128,725
249	General Office Equipment	59,429	45,504
251	General Shop Equipment	18,055	14,979
252	General Stable Equipment	10,799	9,946
253	General Garage Equipment	28,608	22,537
255	General Telegraph and Telephone Equipment	204,214	142,714
256	General Tools and Implements	7,295	5,747
	Total	679,140	576,305
	Total Specific Construction Cost	36,725,422	27,045,784
	Overhead Charges, 18% **	5,398,650	3,656,316
	Total	42,124,072	30,702,100
	Working Capital	990,000	990,000
	Total Property, Exclusive of Going Concern Value	43,114,072	31,692,100

**No overhead charges computed on book cost of gas land, leaseholds and rights included above.

[fol 1883] United Fuel Gas Company

Production System Property

Book cost of land, leaseholds, and natural gas rights $6,732,920

[fol 1884] United Fuel Gas Company

Production System Property (Exclusive of Land, Leaseholds, and Natural Gas Rights)

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
206	Rights of Way:					
	West Virginia	$101,980	..	..	..	.....
	Kentucky	9,474	..	..	..	.....
	Total	111,454	..	..	*	$111,454
208	Gas Well Structures:					
	West Virginia	59,360	..	..	*	44,520
209	Field Measuring Station Structures					
	West Virginia	4,702	..	..	..	.....
	Kentucky	217	..	..	..	.....
	Total	4,919	..	..	*	4,379
210	Other Production System Structures:					
	West Virginia	108,113	20	11	63	68,111
	Kentucky	3,646	..	..	*	2,844
	Total	111,759	..	..	..	70,955
211	Gas Well Construction					
	West Virginia	5,631,849	..	..	..	.....
	Kentucky	257,537	..	..	..	.....
	Total	5,889,386	..	..	*	2,939,917
212	Gas Well Equipment					
	West Virginia	2,061,807	..	..	..	.....
	Kentucky	94,780	..	..	..	.....
	Total	2,156,587	..	..	*	1,470,733
213	Field Line Construction:					
	West Virginia	1,114,395	27	9	66	735,501
	Kentucky	130,208	..	..	*	104,166
	Total	1,244,603	..	..	..	839,667

*Ford, Bacon & Davis results accepted.

Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
214	Field Line Equipment					
	West Virginia	2,383,189	26	8	69	1,944,800
	Kentucky	275,190			*	220,352
	Total	2,658,379				1,964,552
[fol 1885]						
215	Field Measuring Station Equipment					
	West Virginia	39,956	23	5	78	31,166
	Kentucky	1,401	25	7	72	1,011
	Total	41,360				32,177
216	Drilling and Cleaning Equipment					
	West Virginia	195,908				
	Kentucky	8,122				
	Total	204,030			*	142,821
217	Other Production System Equipment					
	West Virginia	31,980				
	Kentucky	1,945				
	Total	33,925			*	28,079
	Total Production System Property	12,404,872				7,306,255
[fol 1886]	Transmission System Property					
218	Land					
	West Virginia	$3,383				
	Kentucky	150				
	Total	3,533			*	3,533
220	Right-of-Way					
	West Virginia	139,583				
	Kentucky	20,505				
	Ohio	8,625				
	Total	159,713			*	159,713

*Ford, Bacon & Davis results accepted

Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
221.224	Compressing Station Structures and Equipment:					
	Huff Lick	324,551	37	4	82	266,148
	Cobb	791,669	42	4	82	650,759
	Frozen Camp	21,586	20	2	90	19,426
	Goad	114,502	26	8	69	79,317
	Kanawha	578,658	22	4	82	474,500
	Kermit	265,944	25	7	72	191,480
	Mammoth—Sun day Creek	155,774	20	2	90	122,197
	Porter	66,736	20	5	78	52,054
	Spencer	591,102	24	6	75	443,330
	Walgrove	993,526	21	3	86	708,632
	Ward	21,512	24	6	75	16,134
	Total	3,977,964				2,713,977
	Kentucky:					
	Hale	32,475	24	6	75	24,356
	Walbridge	103,466	24	6	75	77,600
	Total	135,941				101,956
222.225	Transmission System Measuring Station Structures and Equipment:					
	West Virginia	21,587	25	9	66	14,247
	Kentucky	3,170	25	7	72	2,282
	Ohio	1,501	25	7	72	1,081
	Total	26,258				17,610
[fol. 1887]						
223	Other Transmission System Structures:					
	West Virginia	198,080	25	5	78	154,502
	Kentucky	12,086	22	4	82	9,910
	Ohio	2,428	28	10	64	1,554
	Total	212,610				165,980
226	Transmission System Equipment:					
	West Virginia	7,620,452	20	7	69	5,256,612
	Kentucky	1,302,587	22	9	66	891,702
	Ohio	347,815	26	8	69	239,964
	Total	9,270,856				6,524,313
227	Other Transmission System Equipment:					
	West Virginia	25,825			*	21,949
	Kentucky	6,076			*	5,165
	Ohio	3,336			*	2,836
	Total	35,237				29,950
	Total Transmission System Property	13,422,130				9,717,032

*Part I, Raven & Davis results accepted.

Production System Property—Continued

[fol. 1888] Distribution System Property

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
228	Land:					
	West Virginia	$38,992				
	Kentucky	3,186				
	Ohio	2,983				
	Total	45,161			*	$45,161
230	Rights of Way:					
	West Virginia	3,595				
	Kentucky	538				
	Ohio	758				
	Total	4,891			*	4,891
231	District Regulator Structures:					
	Permanent Installations—West Virginia:					
	Charleston	5,845				
	South Charleston	724				
	Huntington	7,136				
	Kenova	422				
	Logan	478				
	Spencer	533				
	Williamson	1,293				
	Total	16,401			*	13,449
	Permanent Installations—Kentucky:					
	Ashland	2,259				
	Catlettsburg	2,186				
	Total	4,445			*	3,999
	Permanent Installations—Ohio:					
	Ironton	1,514				
	New Boston	1,286				
	Portsmouth	989				
	Total	3,792			*	3,186
	Installations to be abandoned, 1942—					
	West Virginia	6,924	27	9	66	4,570
	Installations to be abandoned, 1942—					
	Kentucky	1,849	24	6	75	1,387
	Installations to be abandoned, 1942					
	Ohio	1,551	28	10	64	993
	Total District Regulator Structures	34,962				27,584

*Ford, Bacon & Davis results accepted.

[fol. 1889] Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
232	Other Distribution Structures:					
	Permanent Installations—West Virginia:					
	Charleston	12,483	..	..	..	.....
	Huntington	9,563	..	..	..	.....
	Kenova	286	..	..	..	.....
	Williamson	6,045	..	..	..	.....
	Total	28,387	..	..	*	22,142
	Permanent Installations—Kentucky:					
	Ashland	825	..	..	..	.....
	Catlettsburg	4,095	..	..	..	.....
	Total	4,920	..	..	*	3,936
	Permanent Installations—Ohio:					
	Ironton	379	..	..	..	.....
	New Boston	3,116	..	..	..	.....
	Total	3,495	..	..	*	2,744
	Installations to be abandoned, 1942:					
	West Virginia	1,516	27	9	66	1,001
	Installations to be abandoned, 1942:					
	Kentucky	1,317	26	8	79	1,040
	Total Other Distribution Structures	39,635	..	..	..	30,863
233	Gas Receivers and District Regulators:					
	West Virginia	19,882	..	..	*	12,400
	Kentucky	11,607	..	..	*	9,281
	Ohio	8,580	..	..	*	7,293
	Total	40,069	..	..	..	30,074
234	Distribution Line Equipment:					
	Permanent Installations—West Virginia:					
	Charleston	469,725	..	..	..	.....
	South Charleston	59,429	..	..	..	.....
	Huntington	561,040	..	..	..	.....
	Kenova	52,946	..	..	..	.....
	Logan	19,527	..	..	..	.....
	Spencer	25,843	..	..	..	.....
	Williamson	41,619	..	..	..	.....
	Total	1,131,129	..	..	*	804,928

* Ford, Bacon & Davis results accepted.

[fol 1806] Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
234	Distribution Line Equipment (Continued):					
	Permanent Installations—Kentucky:					
	West Virginia:					
	Ashland	165,572				
	Catlettsburg	34,262				
	Total	199,834			*	159,868
	Permanent Installations—Ohio:					
	Ironton	130,041				
	New Boston	31,029				
	Portsmouth	24,581				
	Total	185,651			*	148,522
	Installations to be abandoned, 1942:					
	West Virginia	164,644	28	10	64	105,372
	Installations to be abandoned, 1942:					
	Kentucky	50,837	30	12	60	30,502
	Installations to be abandoned, 1942:					
	Ohio	39,751	28	10	64	25,521
	Total Distribution Line Equipment	1,708,976				1,372,773
235	Service Line Equipment:					
	Permanent Installations—West Virginia:					
	Charleston	120,685				
	South Charleston	8,418				
	Huntington	135,569				
	Kenova	12,774				
	Logan	10,086				
	Spencer	7,279				
	Williamson	23,024				
	Total	323,835			*	275,258
	Permanent Installations—Kentucky:					
	Ashland	45,985				
	Catlettsburg	19,298				
	Total	65,283			*	55,490
	Permanent Installations—Ohio:					
	Ironton	36,514				
	New Boston	17,435				
	Portsmouth	2,128				
	Total	56,077			*	47,666

*Ford, Bacon & Davis results accepted

[fol. 1891] Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
235	Service Line Equipment (Continued):					
	Installations to be abandoned, 1942:					
	West Virginia	61,575	26	8	69	42,487
	Installations to be abandoned, 1942:					
	Kentucky	25,247	28	10	64	16,158
	Installations to be abandoned, 1942:					
	Ohio	15,006	25	7	72	10,804
	Total Service Line Equipment	547,023				417,883
236,237	Meters and Meter Installations:					
	West Virginia	480,741			*	413,640
	Kentucky	137,459			*	116,841
	Ohio	116,949			*	99,400
	Orifice Meters to be abandoned, 1942:					
	West Virginia:					
	Nitro	584				
	Barboursville	254				
	Buff Lick	116				
	Total	954	19	1	95	906
	Orifice Meters to be abandoned, 1942:					
	Kentucky:					
	Louisa	242	20	2	90	219
	Total Meters and Meter Installations	742,346				631,012
239	Other Distribution System Equipment:					
	Permanent Installations—West Virginia:					
	Charleston	3,440				
	South Charleston	340				
	Huntington	2,071				
	Kenova	516				
	Logan	283				
	Spencer	348				
	Williamson	553				
	Total	7,551			*	6,417
[fol. 1892]						
239	Other Distribution System Equipment (Continued):					
	Permanent Installations—Kentucky:					
	Ashland	1,062				
	Catlettsburg	528				
	Total	1,620			*	1,377

* Ford, Bacon & Davis results accepted.

Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
	Permanent Installations—Ohio					
	Ironton	1,259				
	New Boston	497				
	Portsmouth	412				
	Total	2,168			*	1,888
	Installations to be abandoned 1942:					
	West Virginia	2,562	24	6	75	1,922
	Installations to be abandoned 1942:					
	Kentucky	1,162	24	6	75	872
	Installations to be abandoned 1942:					
	Ohio	629	26	8	69	434
	Total Other Distribution System Equipment	15,602				12,930
	Total Distribution System Property	2,268,185				2,602,097
[Fol. 1861]						
244	Land (General Office Land):					
	West Virginia	$172,350				
	Kentucky	2,150				
	Total	174,500			*	$174,500
245	Land (other General Land):					
	West Virginia	29,693				
	Kentucky	1,960				
	Total	31,653			*	31,653
247	General office Structures:					
	West Virginia	144,587			*	128,742
249	General office Equipment:					
	West Virginia	53,958			*	41,371
	Kentucky	2,430			*	1,865
	Ohio	3,971			*	2,268
	Total	60,459				45,504
251	General Store and Shop Equipment:					
	West Virginia	14,929			*	12,305
	Kentucky	1,772			*	1,462
	Ohio	1,354			*	1,152
	Total	18,055				14,919

* Ford, Bacon & Davis results accepted

Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
252	General Stable Equipment:					
	West Virginia	10,799	..	..	*	9,946
253	General Garage Equipment:					
	West Virginia	27,089	..	..	*	21,421
	Kentucky	710	..	..	*	497
	Ohio	799	..	..	*	619
	Total	28,598	..	..	..	22,537
255	General Telephone and Telegraph System:					
	West Virginia	184,153	26	8	69	127,066
	Kentucky	20,061	23	5	78	15,648
	Total	204,214	..	..	..	142,714

[fol. 1894]

256	General Tools and Implements:					
	West Virginia	6,473			*	5,120
	Kentucky	477	..	..	*	353
	Ohio	345	..	..	*	274
	Total	7,295	..	..	..	5,747
	Total General Property	679,140	..	..	..	576,305

[fol. 1895] United Fuel Gas Company

Estimated working capital $960,000

[fol. 1896] Hagenah Exhibit No. 2

[fol. 1897] Analysis of Report Submitted by Mr. R. E. Davis

The Valuation Theory Adopted by Mr. Davis

Mr. Ralph E. Davis has filed an exhibit entitled "Appraisal of Natural Gas Property—December 31, 1923," covering the natural gas fee and leasehold property of the United Fuel Gas Company, his conclusion being that such value on the above date was $32,478,129.

The basis adopted by him in arriving at the above conclusion is stated on page 2 of his report as follows:

The value of a property capable of producing natural gas is conceived to be measured by the prospective earning power of the property placed at its most advantageous use. To determine the value of

* Ford, Bacon & Davis results accepted.

such property it is necessary to consider the present use to which the property is placed and to compare this use with other uses available. If the present use is found to be most advantageous, the valuation will be dependent upon the prospective earning power of the property in its present use. If a more advantageous use be found available, it is necessary to determine if such use be competent to return a greater earning and the amount of such earning.

In this instance he applied the above theory on the assumption that the United Fuel Gas Company could relinquish its public utility business and more profitably dispose of its entire gas supply to the steel industry in Pittsburgh at a rate of 35 cents per thousand cubic feet, this rate being the lowest price at which a substitute service could be supplied. By a series of estimates and computations he determined the prospective profits from such natural gas sales over the 18 year estimated life of the property and, after allowing for expenses incident to such service, reduced the aggregate profit as thus developed to terms of present worth, and the amount by which the latter result exceeds the appraised value of the physical property necessary to the furnishing of such service is claimed to measure the value of the company's gas reserves.

An examination of Mr. Davis' report indicates (1) that his theory has no place in the valuation of a public utility property, and (2) that his numerous estimates and assumptions furnish no reliable basis on which the fair value of public utility property can be ascertained. This is apparent when the report is analyzed in detail. The criticism which at once suggests itself is two-fould, namely, that which goes to the method he adopted, and that which pertains to the [fol. 1898] data on which his theory is applied. These subjects are here briefly discussed.

Inapplication of Exchange Value Theory

General.

In making all of his estimates, Mr. Davis has considered only exchange value in the economic sense. This method is not recognized by public service commissions and never has been considered a factor in the appraisal of public utility properties. The economic definition of value as contained in the works of such authorities as John Stuart Mill, Jevons and Taussig recognizes, in the case of a commodity, the power of commanding other commodities in exchange, for "value" merely expresses the circumstance of exchange in a certain ratio for other commodities or services. In a natural gas rate case exchange value cannot logically be a valuation factor, since exchange value depends upon the net income, both present and prospective, and that income in turn depends on the rate to be charged, the amount of gas in the reserve and the cost of its delivery. Exchange value being dependent upon the rate, it follows that such relationship cannot be the subject of inquiry in a rate case. To base the rate upon the exchange value in this case would be merely to continue the assumed rate, and this condition would obtain so long

a such rate was not disturbed. If a change in rates affects the income, it correspondingly affects the exchange value, and if the rate can be arbitrarily fixed by the cost of supplying a competitive and substitute service, the exchange value is thereby also fixed. Courts have stated in language that admits of no misunderstanding that exchange value is not a factor in arriving at the fair value of public utility property for rate purposes. In disregarding judicial interpretation on this point, Mr. Davis assumes the correctness of one of the main factors in issue in this case, namely, the rate.

Mr. Davis has applied the exchange value theory by capitalizing the earning power of an unregulated monopoly. Having determined the cost of supplying the industrial gas service in Pittsburgh with producer gas as a substitute fuel, he capitalizes the difference between such cost and the cost of delivering natural gas in the same market as the monopoly advantage of the United Fuel Gas Company. This amounts to denying to the public all the benefits of natural gas, for if the price of the latter is to be determined on the basis of the cost of a substitute service, the public might as well have no natural [fol. 1899] gas resources. This same theory was at one time advanced by the owners of other natural resources devoted to public service, notably water power companies, railroad facilities, etc. It is the settled practice of utility commissions in rate inquiries not to consider the earning power of the utility as the basis on which to determine the value of that property for the use of which reasonable rates are to be prescribed. To adopt the earning power as the measure of value of a natural monopoly on which a reasonable return may be earned is but to reason in a circle, a fallacy which has long been recognized by regulatory bodies and rejected by state and Federal courts and the United States Supreme Court. Railroads have never received official sanction for rates based on the cost of performing the same service with a substitute facility, or on the basis of "what the traffic would bear." Owners of water powers devoted to public utility service have never been permitted to capitalize their natural resources on the basis of the total savings in such business as compared with performing the same service with steam generation facilities. There is no process of reasoning by which owners of natural gas deposits can capitalize the advantages which such natural resources provide as compared with the cost of artificial gas.

A review of Mr. Davis' report shows the extreme position which he has been forced to take in order to find support for his valuation conclusion under even the exchange theory of value. He applies his theory to conditions in both the Pittsburgh district and in other available markets as is herein set forth.

The Pittsburgh Market.

Even if we accept, for the purpose of analysis, the theory advanced by Mr. Davis, it is apparent that his statements and conclusions are not supported by the facts. The steel industry does not at this time afford the ready market for natural gas on which Mr.

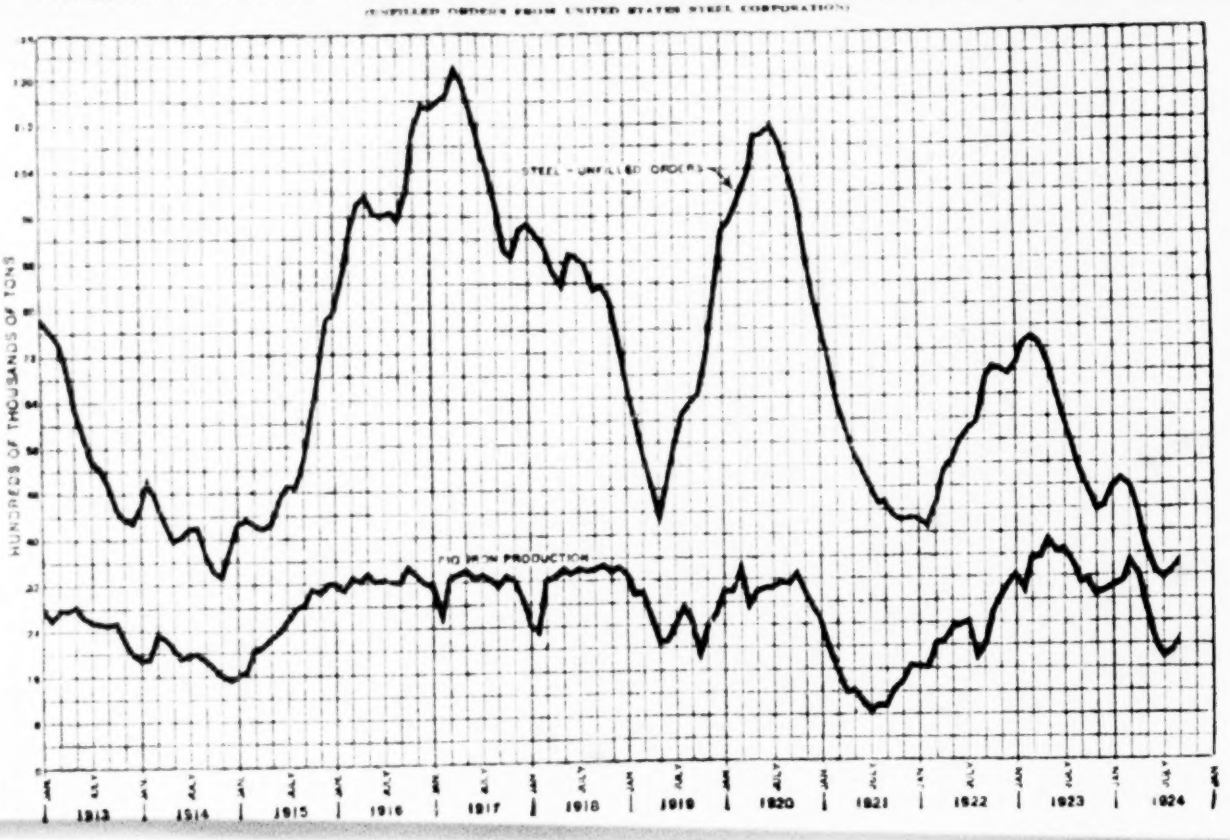
Davis predicates the enormous value above set forth. On page 8 of his report he correctly states the present situation regarding the use of natural gas in the Pittsburgh district. He says:

> We find that today the steel industry of the Pittsburgh district is emerging from the period when natural gas was largely used as a fuel and entering a period in which bituminous coal supplies the fuel requirements formerly met by natural gas. It is evident that a critical period in the use of natural gas in the steel industry of the Pittsburgh district has been reached.

The "critical period in the use of natural gas" to which Mr. Davis [fol. 1980] refers is attributed by both the steel interests and the natural gas interests to the uncertainty of the gas supply during periods of maximum residential and commercial demands and the general recognition that as between the steel industry and the latter classes of customers, the broader public interest requires that wholesale industrial consumption give way. It is a well known fact that the steel industry either operates under very profitable conditions, when it cannot afford to have its fuel supply interrupted, or is confronted with depression, when it is unable to accept the quantity of gas that could be delivered. To use Mr. Carnegie's famous phrase, the steel industry is either "prince or pauper." The maximum demand of the iron and steel industry in periods of great prosperity would exceed the capacity of the natural gas company, but would fall far below such gas capacity in the regular cycles of depression. No steel manufacturer will rely on Mr. Davis' ready assumptions and ignore the strongly defined sentiment for increasing the availability of natural gas to the public instead of confining its use to a single favored industry. This fact explains exactly why the steel industry is looking elsewhere for a reliable fuel supply and why now "bituminous coal supplies the fuel requirements formerly met with gas."

There is no uncertainty on this subject. In the natural gas rate cases now being heard before the Pennsylvania Public Service Commission in Pittsburgh it is being strongly urged by the local companies that substantial increases in rates are necessary from domestic and commercial consumers because the constant and necessary interruptions of the gas service to the steel industry have caused the loss of the latter class of business. Also they add that there is no likelihood of the gas companies ever being able to regain this business. It was the gas company officials who called attention to the decision of various units of the United States Steel Corporation to make themselves independent of natural gas and the action of the largest independent manufacturer in the Pittsburgh district, namely, Jones & Laughlin Steel Company, which is abandoning natural gas service entirely.

There is no industry in the United States subject to more frequent and wider fluctuations in the demand for its product than is the iron and steel industry. This is very important since a reasonably constant relation between supply and demand is greatly needed by both the steel industry and the gas business. If the former cannot obtain


PIG IRON PRODUCTION AND UNFILLED STEEL ORDERS AT THE END OF EACH MONTH
(UNFILLED ORDERS FROM UNITED STATES STEEL CORPORATION)
HUNDREDS OF THOUSANDS OF TONS
STEEL - UNFILLED ORDERS
PIG IRON PRODUCTION
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924

1902

fic gas when most needed, and if it is unable to take the offered sup-
fol. 1901] ply at other times, this industry is not the one on whose
continued patronage Mr. Davis can base a valuation of over $32,-
000,000 as a capitalization of prospective profits over a period of
8 years in the future. The diagram below, taken from a recent
report of the United States Department of Commerce, shows the
fluctuation in the unfilled steel orders and in pig iron production of
the United States Steel Corporation over the period from January 1,
1913, to September 1, 1924. That the fluctuations in this diagram
constitute the normal trend in the steel industry is amply borne out
when one carries the curve back to the opening of the present century.
The diagram follows:

(Here follows diagram marked side folio page 1902)

[fol. 1903] Since the range in the percentage of operated capacity
of the independent mills has been wider than that of the leading
corporation, the possibility of profitable sales of natural gas to the
steel industry as a whole is rather remote. In view of the conditions
disclosed by the above chart, Mr. Davis cannot successfully contend
that this highly fluctuating demand can be served by the United
Fuel Gas Company, both in supplying the extreme peaks and in
withholding its output in periods of depression. Even these wide
fluctuations will be exceeded in the future as a result of the recent
"Pittsburgh Plus" decision of the Federal Trade Commission, which
decision has already occasioned great activity in the expansion of the
steel producing capacity in other industrial centers to the disad-
vantage of the Pittsburgh market. Further, his arguments cannot
be reconciled with the above statements of the natural gas companies
in Pittsburgh which are diametrically opposed to his basic assump-
tions. If Mr. Davis' assumptions are right, the natural gas com-
panies supplying the Pittsburgh district are overlooking a splendid
opportunity at their very doors. If their testimony that they have
lost the steel market in their immediate communities is correct and
also that they can never regain it, there is nothing in Mr. Davis' re-
port to show that he could supply gas in Pittsburgh under more
favorable and more permanent conditions. They cannot both be
right. This situation fully justifies and explains the following
quotation from Mr. Davis' report, page 7:

The art of using coal for steel manufacture is now highly de-
veloped. Where the fuel is required in gaseous form, the coal is
converted into gas either in a producer plant or as a by-product in
the coking plant. This has developed a condition in the steel in-
dustry in which natural gas competes as a fuel with bituminous coal
under circumstances in which the coal is most efficiently used.

Since natural gas can be supplied more cheaply than artificial gas,
it is pertinent to inquire as to who is entitled to all the benefits from
the savings or wealth growing out of the development of these gas

fields. In fixing the value of other developed natural gas resources, commissions have found it proper to give the public some share in these benefits. Mr. Davis does not mention this obligation. In the instances where the public has been given a share in the resulting savings, the commissions have sought to determine a reasonable basis for such segregation. In this instance, if the company has the right to sell its gas in Pittsburgh on the basis of the cost of supplying an artificial substitute service, it is also entitled to keep all the benefits growing out of its legal powers. If it has not the right to capitalize [fol. 1984] its property values on the above basis and the West Virginia commission has the right to fix a lower price, then the commission also has the right to determine the basis for apportioning the benefits growing out of the company's monopoly position.

The state of West Virginia has given the United Fuel Gas Company, under its status as a public utility, some rights and privileges which have enabled it as the owner of these valuable natural resources to procure their development and the sale of their product on a satisfactory basis, for the law which imposes responsibilities also confers great monopoly privileges to public utilities. There is no foundation for assuming that, having been given valuable property rights by the public, this company is now possessed of the right to charge as much for its product as the next available substitute for that service would cost. Such a proposition requires strong and convincing legal proof before it can be accepted. If the United Fuel Gas Company is a public utility to the extent that it may seek the aid of the Public Service Commission of West Virginia in an application for increased rates it cannot capitalize its gas reserves for rate-making purposes on the basis of an unregulated monopoly. Its very appearance in this case is a rejection of the theory on which Mr. Davis has proceeded. It is asking this commission to permit it as a public utility to earn a reasonable return on a valuation which can only be defined as the capitalization of a monopoly power outside of and beyond regulation by the public.

It is therefore obvious that the alleged value of the gas reserves depends on whether the company has a right to sell its product at the substitute fuel cost, with a proper return computed upon the capital invested in distribution to the market in question. If the United Fuel Gas Company has that right, the theory presented must be accepted and there remains only the question of whether it can properly be applied and the basic data estimated with reasonable accuracy. If the company has no such right, the theory and all that is based on it falls to the ground.

If the Public Service Commission of West Virginia has the right to fix a selling price to be charged by this company below the estimated cost of furnishing the same service with an artificial substitute, it can reasonably affect the value of the gas reserves. If it should reduce the selling price of gas so that the profit which Mr. Davis assumes is greatly reduced, the value of the gas reserves would be correspondingly reduced. Stating the matter in another form, the [fol. 1985] value of the gas reserves as determined by Mr. Davis depends upon the price which the company is entitled to receive

for its gas. If it is entitled to receive a high rate, the value of the gas source is thereby enhanced; if, on the other hand, the company is not entitled to charge 35 cents per thousand cubic feet for its product, but may be required to sell it at a materially lower sum, the estimated value of over $32,000,000 diminishes as the profit is reduced. Under the exchange theory the selling price determined by him at once fixed the value of the gas reserves and the entire matter depends on whether the company has the right to sell its product at the cost of supplying a substitute service. There is nothing in Mr. Davis' report to show that the company has such rights; he merely assumes it and by the necessary additional assumptions removes every obstacle to the application of his theory.

Other Available Markets

Possibly the fatal defect in the theory applied in the above instance was recognized by Mr. Davis, for he has also sought to justify his computed wholesale rate of 35 cents per thousand cubic feet by the fact that the United Fuel Gas Company's transmission system is advantageously located for the furnishing of wholesale service to other companies. The following extract is taken from page 9 of his report:

The transmission system of the United Fuel Gas Company is now connected with the lines of various other companies through which gas may be delivered to the principal natural gas markets of the Ohio Valley. At comparatively small expense connections with the lines of additional companies having large markets can be made. This situation is sufficiently strategic to enable the United Fuel Gas Company to command for its gas supply, once the limitations of existing contracts have expired, the maximum value of its gas supply. This situation is sufficiently real to make it unnecessary for the United Fuel Gas Company to undertake the actual construction of lines to the Pittsburgh district, as it will shortly be able to command a price at Colarville or elsewhere which will neutralize the advantage of a direct market in Pittsburgh.

The above quotation can only mean that because of the higher rates which the regulatory authorities in remote centers now supplied by natural gas from West Virginia have seen fit to grant because of the much higher cost of coal and artificial gas in such communities, this company may capitalize the profit from such rates to enforce a demand for higher rates from the cities near the fields. This is merely another form of applying exchange value as above explained. However, if such a course were proper, an increase in rates granted by the authorities in Ohio and Pennsylvania would be a lever for increasing rates in West Virginia, and when the latter increase had been obtained, they in turn would serve to establish a valuation on which higher rates would be demanded in Ohio and Pennsylvania. In practice this means that a rate increase granted in one city would compel an equal or higher rate in every other city in order to attract its necessary gas supply. The history

of natural gas rate increases indicates the operation of just such a vicious circle as is above described.

Adopting the thought of the Public Service Commission of New York in a case wherein it rejected the exchange value as furnishing a means for determining the fair value of a natural resource, and substituting in its statement the facts peculiar to this company, the entire issue is expressed in the following language:

> It may very well be that this company is entitled in view of all the circumstances of the case, to a liberal return upon the capital actually invested in developing the gas fields. It may very well be that the people exploiting this enterprise are entitled to large, and even very large, profits for the skill they have displayed and the risk to which they have subjected their capital. It may be that the public ought to pay them very liberally for the work which they have carried on in the public interest, but to say that the people of West Virginia are entitled to no advantage from the development of the natural gas wealth of that state, that the territory especially favored through the location of these resources, has no advantage and is entitled to no benefit by reason of its proximity thereto is to say something which does not appeal to the best judgment of mankind for an instant.

Estimates and Assumptions Relied on by Mr. Davis

The foregoing discussion has dealt with the exchange theory of value adopted by Mr. Davis in his appraisal of the company's gas reserves and an analysis of that theory showing why it cannot apply in the valuation of public utility property. Assuming, however, for the purpose of further analysis, the correctness on the above theory, a study of his supporting data also shows that the result which Mr. Davis reached is founded on estimates and assumptions that cannot be sustained.

In the application of the exchange theory, Mr. Davis disregards the company's present operating conditions, its earnings and its operating expenses, and relies on estimates and assumptions pertaining not only to the nature of the service and its cost, but also regarding questions of policy, management and economic development over the life of the present gas reserves. His appraisal is not based on [fol. 1867] present facts, but is a hypothetical study, highly speculative, and founded on a large number of assumptions, estimates and opinions, a variation in any one of which would seriously affect, if not entirely upset, the conclusions reached. All these estimates and assumptions are but his personal opinions in respect to which other men equally well informed might easily differ, and to the extent that they did so the conclusions would be materially altered. His conclusions would be seriously disturbed by the moderate changes in costs produced by the frequent minor business cycles, while the changes in costs produced by the major cyclical movements would utterly destroy any conclusions founded on such concepts as Mr. Davis has assumed. It would be as easy, and probably more ac-

urate, to estimate on his own theory the value of the reserves outright as to prepare his involved series of estimates, the $32,000,000 conclusion from which is supported only so long as the various items in the tables maintain a specific and continuing relationship to one another. The unreasonableness of his estimates and assumptions stands out when an analysis is made of the several steps which he took in arriving at the conclusion above set forth. These steps are as follows:

a. Estimated the value of natural gas for steel making in Pittsburgh.

b. Estimated the cost of transporting gas between Pittsburgh and company's present station at Cedarville.

c. Estimated the net value of gas at Cedarville.

d. Estimated the present worth of prospective profits based on estimated future production delivered at Cedarville over period of 18 years.

e. Estimated value of gas reserves as distinct from other operating property.

The unreasonableness and highly speculative character of Mr. Davis' estimates for each of the 18 years in the future is illustrated in the following table which sets forth for a single year (1924) the estimates relied on to support his conclusions.

(Col. 1908) A. Estimated Cost per M Cubic Feet

		Cents per M cubic feet
Estimated value of natural gas in Pittsburgh in competition with hot producer gas		33.250
Estimated cost of transmitting gas between Cedarville and Pittsburgh		5.260
Value of gas at Cedarville		27.990
Estimated cost of new wells assumed necessary	2.895	
Cost of producing, transmission and prospecting	8.250	
		11.145
Net value of gas		16.845

B. Value Claimed for Gas Reserves Based on Estimated Value of Gas per M Cubic Feet

Estimated life of gas reserves		18 years
Estimated sales for 18 years		
Estimated production, billion cubic feet	636.1	
Gas purchased, billion cubic feet	38.6	
Total		674.7

	Cents per M cubic feet
Prospective net income for 18 years	$91,792,884
Present worth of above on 8% compound discount basis	56,582,799
Deduct estimated Federal income taxes for 18 years	4,401,261
Market value of total property involved	52,181,538
Less Mr. Uebelacher's appraised value of physical property necessary to serve Pittsburg market	19,723,409
Value of natural gas fee and leasehold property	32,458,129

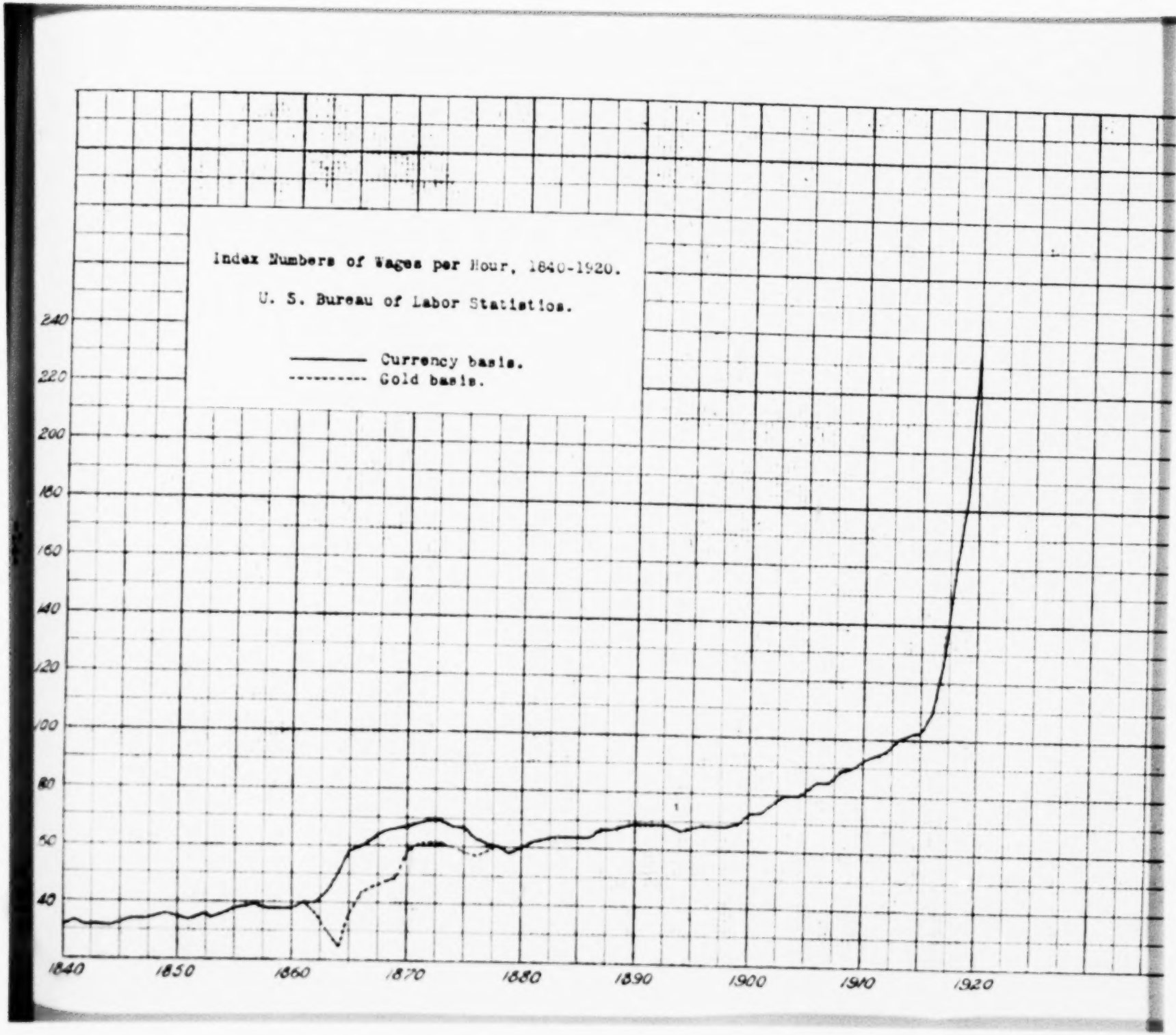
The above several steps and their unrelated character are discussed below.

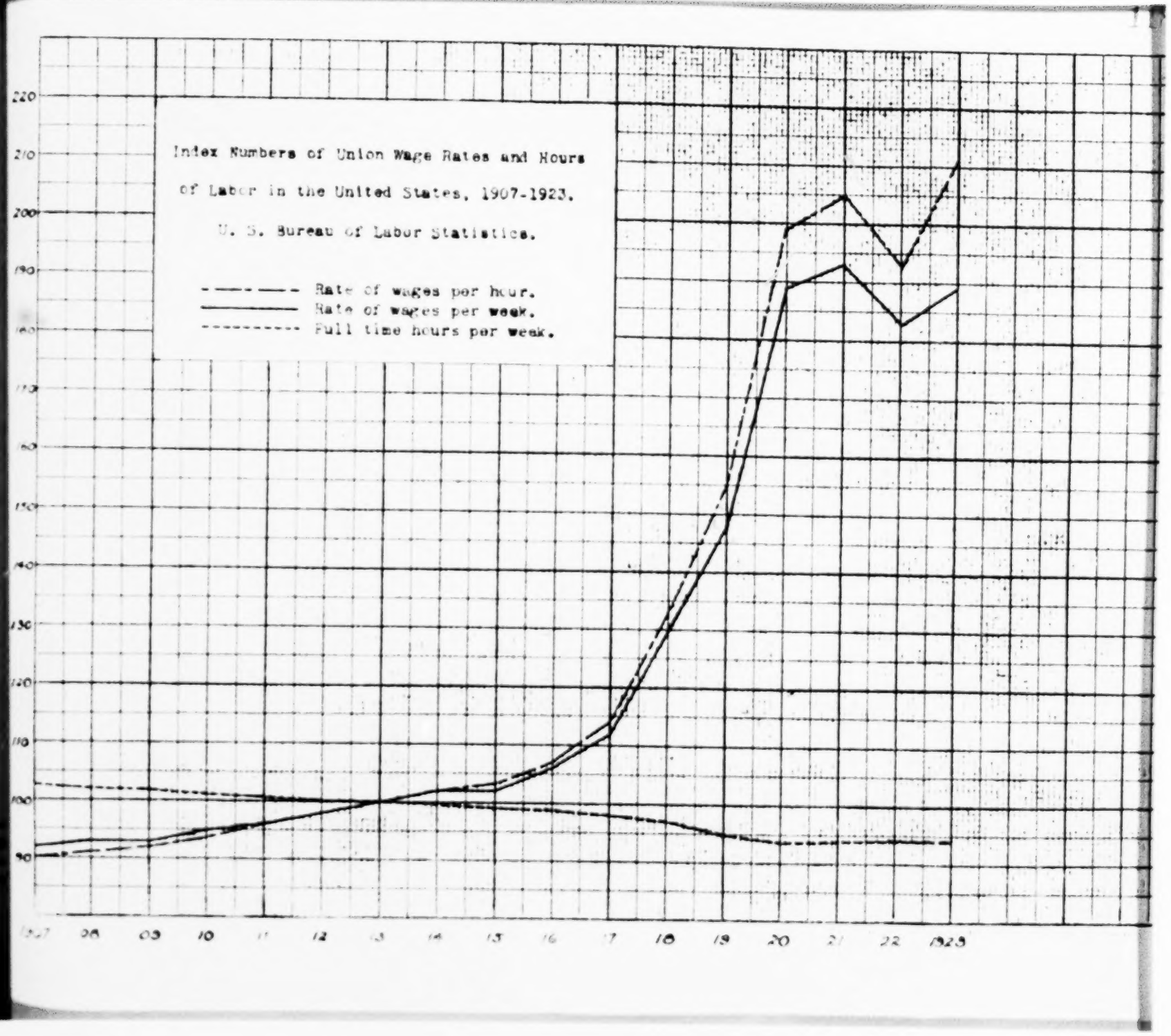
Estimated Value of Natural Gas for Steel Making in Pittsburgh Market.

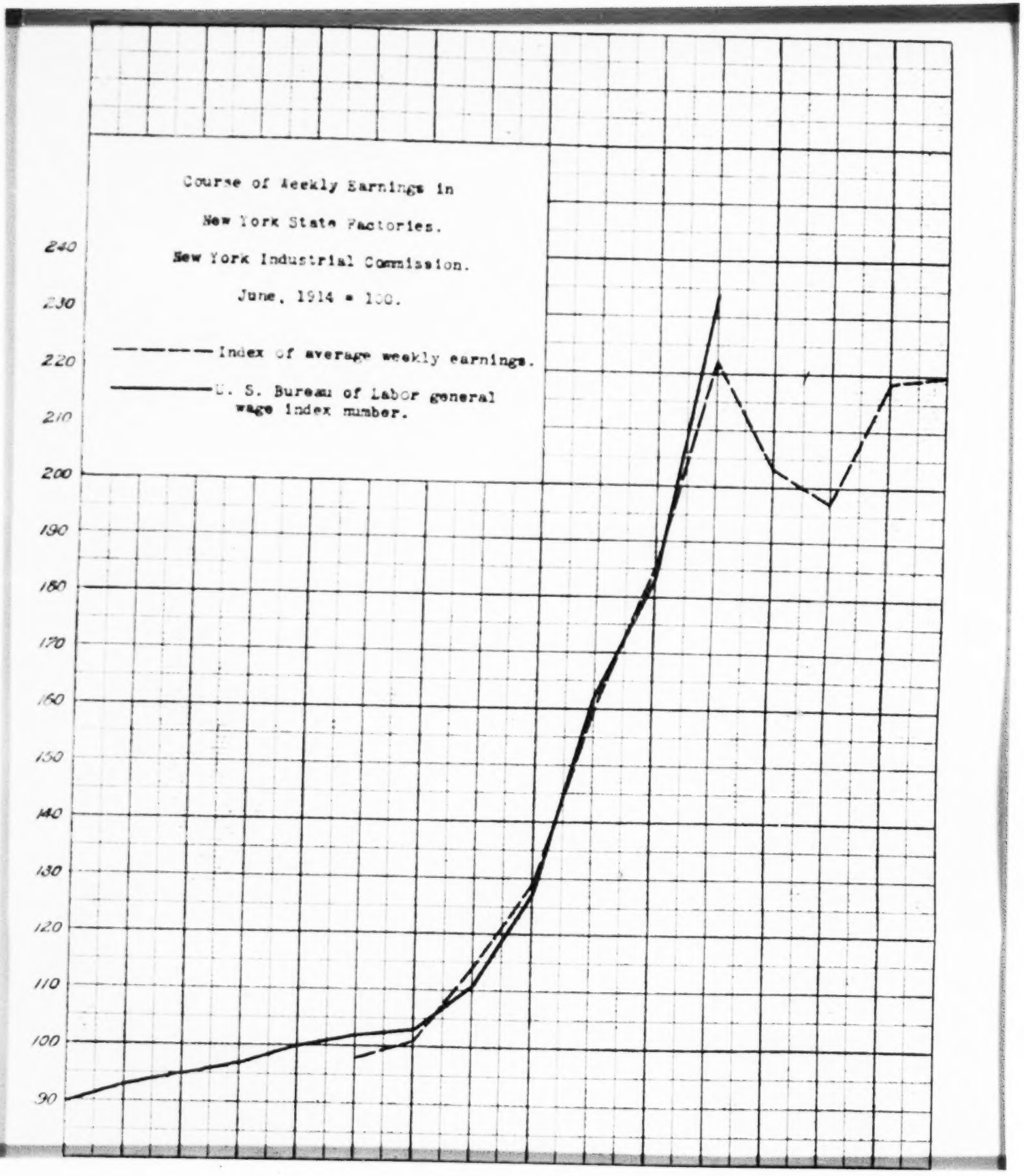
Mr. Davis finds that the company's product is worth 55 cents per thousand cubic feet in Pittsburgh because that rate measures the cost of supplying the same service with artificial gas produced from coal. This conclusion is reached from a comparative study in which he estimated the cost of a particular producer plant of a certain size and capacity, assumed a certain rate of gas production and labor efficiency and assumed the price of coal and other operating supplies, salaries and wages, specific steam and gas-making qualities of the coal used, cost of repairs, depreciation and interest, and the relative heating qualities of natural gas and such artificial gas. His estimates presuppose that there will be no material change in the [fol. 1969] level of labor and material prices over the next 18 years. Any changes in these estimates would seriously affect the value of the gas reserves on his basis. His theory also presupposes the abandonment of that part of the gas company's present physical property that would not be adapted for use if the entire output of the company were delivered in the Pittsburgh market. Mr. Davis makes no allowance in his cost study for the losses growing out of the abandonment of such property as would not be necessary if the entire output were delivered in Pittsburgh, such property being appraised by Uebelacher in excess of $12,000,000.

The unreasonableness of the more important estimates embraced in his computations is shown by a study of the present fuel market and the level of wages and labor costs which now obtains. The likelihood of lower prices for coal and the conditions which will favor such reduction are discussed in a separate memorandum, it being evident from such study that numerous influences are contributing to bring about a lower level of prices in the bituminous coal industry, and that the price level accepted for this commodity by Mr. Davis is wrong. Moreover, this estimate is one of the vital factors on which his appraisal result is predicated.

Again, note the enormous increases that have taken place in wage


Index Numbers of Wages per Hour, 1840-1920.
U. S. Bureau of Labor Statistics.
Currency basis.
Gold basis.
240
220
200
180
160
140
120
100
80
60
40
1840
1850
1860
1870
1880
1890
1900
1910
1920


Index Numbers of Union Wage Rates and Hours of Labor in the United States, 1907-1923.
U. S. Bureau of Labor Statistics.
Rate of wages per hour.
Rate of wages per week.
Full time hours per week.
220
210
200
190
180
170
160
150
140
130
120
110
100
90
1907
08
09
10
11
12
13
14
15
16
17
18
19
20
21
22
1923


Course of Weekly Earnings in
New York State Factories.
New York Industrial Commission.
June, 1914 = 100.
Index of average weekly earnings.
U. S. Bureau of Labor general wage index number.
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90

scales as a result of the war and which rates have not yet been adjusted to a stable business basis. The following table, compiled by the United States Bureau of Labor, shows wages to be at this time at the highest point in history:

Index Numbers of Union Wage Rates and Hours of Labor in the United States as of May Each Year, 1907 to 1923

(1913=100.0)

Year	Index number of		
	Rate of wages per hour	Full time, hours per week	Rate of wages per week, full time
1907	89.7	102.6	91.5
1908	91.0	102.1	92.5
1909	91.9	101.9	93.3
1910	94.4	101.1	95.2
1911	96.0	100.7	96.5
1912	97.6	100.3	97.7
1913	100.0	100.0	100.0
1914	101.9	99.6	101.6
1915	102.8	99.4	102.3
1916	107.2	98.8	106.2
1917	114.1	98.4	112.4
1918	132.7	97.1	129.6
1919	154.5	94.7	147.8
1920	199.0	93.8	188.5
1921	205.3	92.9	193.3
1922	193.1	94.4	183.0
1923	210.6	94.3	198.6

The following tables, based on data contained in the reports of the United States Bureau of Labor and the New York Industrial Commission, show the huge wage increases in graphic form:

(Here follow diagrams marked side folio pages 1910, 1911, and 1912.)

[fol. 1913] The above tables show the changes in the labor markets brought about by war and postwar conditions and it is this level of wages on which Mr. Davis bases his labor costs for 18 years in the future. Any study of the conditions which brought about this cost level and which have for some years operated to sustain it can only lead to the conclusion that the process of readjustment which economic forces are now compelling will be accompanied by declining labor costs. Every series of international conflicts has brought about great increases in wages, and the history of the last century records two instances where the same violent increases in wages occurred as have been witnessed since 1917. The same history, however, records that following such wars and in the inevitable readjustment which peace makes necessary, there was a gradual de-

cline in commodity prices and labor costs, the latter being accomplished in many instances through inventions and high speed machinery. In all major down-swings in modern economic history, wage scales have remained more or less unchanged, but labor costs as a result of both wage adjustments and increased labor performance have tended strongly downward in a manner not unlike that reflected in the declining tendency in commodity prices. To assume that the level of labor costs and prices which prevailed in December, 1924, furnishes a reliable basis for estimating costs for 18 years in the future is so contrary to the experience recorded by industrial history as to render any conclusion based thereon of little value.

Estimated Cost of Transporting Gas Between Pittsburgh and Cedarville

This item represents the estimated costs which would be incurred by the United Fuel Gas Company in delivering gas from its present wholesale station at Cedarville to the steel industry in Pittsburgh. It is purely an estimate of the operating expenses and fixed charges for interest and depreciation on the plant extensions which would be needed in this service were the assumption that the total output is to be sold in Pittsburgh carried out. These costs do not pertain to the present operations of the company, but reflect the probable cost of furnishing service with a different plant and supplying gas at a single point on a wholesale scale not now possible. Mr. Davis' theory also contemplates the abandonment or sale of that part of the company's present plant and equipment which would not be useful in supplying the service on which his appraisal is based, but he makes no allowance in his numerous estimates for the loss which [fol. 1914] would be sustained by reason of such sale or abandonment of property.

Estimated Net Value of Gas at Cedarville

In arriving at the margin of profit to be capitalized as the measure of value, Mr. Davis deducted from his estimated value of the gas in Pittsburgh the above estimated cost of transporting gas between Pittsburgh and Cedarville and concludes that the difference represents the net value of the gas at the latter point. It will be noted that this conclusion is not based on the present costs incurred by the company in producing and delivering gas at Cedarville. Moreover, he made many additional estimates, for from the estimated cost of the gas at Cedarville as thus determined, he deducted the estimated expense to be incurred by the company each year in prospecting, producing and distributing gas to Cedarville for transportation to Pittsburgh, and he also estimated the cost of bringing in necessary additional wells. As to the latter item, he estimated the number of wells that will be constructed each year for the next 18 years and the cost of such wells, their life and their production, the number of dry holes that will be encountered, and further estimated what will be the yearly rate of development of the field over such estimated life. In this connection he assumed that the cost of well drilling

will always remain the same and that the ratio of dry holes to producing wells will never be different than the ratio found last year. The sum of these various estimates he regards as the cost of producing and supplying gas at Cedarville, and the difference between such costs and the net value of gas at that point, as previously determined, is regarded as the net value of the gas to be capitalized. This conclusion therefore represents the maximum value which Mr. Davis is able to ascertain for the natural gas in competition with artificial gas and, consequently, reflects the monopoly or exchange value of the property. It has no connection with the actual costs incurred by the company in producing and delivering the service at the point in question.

Present Worth of Prospective Profits Based on Estimated Future Sales.

The net value of the gas as thus determined is computed by Mr. Davis for each year over the life of the fields and multiplied by the estimated sales for such years, the aggregate gross income over the 18 year period being placed at $80,592,894. To this amount Mr. Davis applies an 8 per cent compound discount factor, reducing the income to terms of present worth, or $56,582,790.93. Deducting [fol. 1915] from the latter amount the federal income taxes ($4,401,261.76), which Mr. Davis estimates the company will be required to pay over the next 18 years, he accepts the result as the value of the hypothetical plant set up to serve the Pittsburgh market. This value is said to be $52,181,538.17.

Estimated Value of Gas Fee and Leasehold Property.

Since the above total of $52,181,538.17 is the exchange value of the entire property, Mr. Davis deducted therefrom the appraised present value of the plant and equipment necessary in the production and delivery of the entire output of gas to the Pittsburgh district. This property was appraised at $19,723,408. Deducting this amount from the above total leaves the $32,458,129.17 which it is claimed measures the value of the fee and leasehold property.

Conclusion.

The sum of $32,458,129 as developed by Mr. Davis, does not measure the present value of the gas fee and leasehold property. It was arrived at through the application of a theory that has no place in the appraisal of utility property. The recognition of the right to regulate eliminates the very factor which Mr. Davis sought to capitalize. On pages 2 and 3 of his report, Mr. Davis, by way of justifying his use of the exchange theory of value, states that it has long been relied on by engineers in appraising mining properties and that it has also been accepted as evidence of value in taxation matters. In both respects he is right, but the significance thereof is lost when it is considered that we are not dealing with questions of open market sale value or of taxable worth. In those instances where

the exchange theory has been applied, the property was subject to the law of supply and demand. The right to fix rates carries with it the power to affect open market values, but the fair value of utility property cannot be predicated on the rate that is in issue. Mr. Davis has reasoned in a circle.

However, even if the exchange theory could properly be considered in the appraisal of natural gas fee and leasehold lands, the absence of reliable data on which to support it would leave any conclusion derived therefrom without practical worth. A valuation theory by which property recently acquired for approximately $6,000,000 can be shown to have a present fair value of over $32,000,000 must be supported by more accurate information than a [fol. 1916] series of more or less unrelated personal opinions and estimates, each of which may be the subject of extensive controversy. The conclusion reached by Mr. Davis is erroneous because it lacks economic and legal sanction for the basis on which it is founded, and because it has been developed through a series of estimates unrelated to present operations and costs and too speculative to be convincing.

[fol. 1917] HAGENAH EXHIBIT No. 3

[fol. 1918] Mr. Ralph E. Davis, testifying on behalf of the United Fuel Gas Company, submitted an appraisal report covering the natural gas fee and leasehold property of that company as of December 31, 1923, the valuation arrived at being $32,458,129. This conclusion was reached by capitalizing the savings from the use of natural gas, as compared with producer gas, when sold in the Pittsburgh district at a rate of 35 cents per thousand cubic feet. The cost of the producer gas was determined by a series of estimates, including an estimated cost of screened gas coal, such as is used in the manufacture of producer gas, at a rate of $4.00 per ton, delivered in the Pittsburgh market. As the estimated life of the appraised gas reserves was placed at 18 years, Mr. Davis' estimate involves the assumption that the above price per ton will be unchanged over this period. Should the market price of coal tend downward over the next 18 years, the cost of producer gas would also decline, and with it the margin in favor of natural gas as estimated by Mr. Davis. On the basis which he adopted, this would result in a substantial reduction in the appraised value of the property in question.

The assumption that the market price of coal will be stabilized on the December 31, 1923, price level is not supported by the history of the bituminous coal industry, nor by the conditions which now prevail regarding the supply and demand for this fuel. Limitation of space prevents a review of all the material factors which operated to establish the price of $4.00 per ton as a fair cost on the date indicated. It can, however, be stated that the above price will not obtain over the period in question and that economic forces are operating to bring about greater stability in production, reduction in operating costs,

and improved methods of distribution, with a corresponding reduction in prices. The factors contributing to the downward movement in the price of coal are briefly reviewed in this memorandum.

Historical

Before analyzing the competitive factors which operate so strongly to affect the market price of coal, a brief survey of the recent history of this industry is necessary. Prior to the outbreak of the war in 1914, the industry had expanded at a greater rate than was required by the business needs of the country. The business was unstable, growing non-union fields furnished severe competition, and the wholesale price of coal varied only a few cents from year to year. The World War, for a time, arrested these competitive forces. With [fol. 1919] the extraordinary war demand for coal, prices rose enormously, stimulating increased development and the opening of many new mines. Wages advanced rapidly and a substantial parity between union and non-union fields seemed to be realized.

With the collapse of the war demand, the old competitive forces reappeared and the industry again became unstable. After the strike of 1919, consumers held very low stocks, and a combination of a railway strike among switchmen and an unusual export demand caused abnormal prices. Union wages were advanced by award and through demands to $7.50 per day. In the following year of depression, consumption decreased and consumers, already heavily stocked, could not be persuaded to buy coal for storage. Prices thereupon dropped, mines were closed, and part time operation ensued. Wage cuts, begun in April, 1921, had extended to all non-union fields by the end of the year. These reductions carried wages back to the 1919 level, and later in some non-union districts to even the 1917 rates. Non-union labor costs were reduced and business again began to be diverted from union to non-union fields. This pressure of non-union coal was especially keen in the case of those union fields that lay close to non-union fields and were shipping into the same market.

The union operators demanded drastic wage reductions, but the miners claimed that working time had decreased and the high rate had yielded less than living wages. Lowering union wages, however, would not remove the unequal competition between the union operator with fixed labor costs and the non-union operator with flexible labor costs. It was recognized that any level to which union wages might have been reduced by agreement could have been met by the non-union operator. With the inevitable strike, the price of coal rose in 1922 so that the union operator could afford to pay the wage rate demanded. Non-union coal poured into the normal union market during the strike, and the union operators were anxious to settle their labor problems and to enjoy the temporary favorable market that existed late in 1922 and early in 1923. For nine months after the settlement, the shortage created by the strike removed all difficulty in the way of paying the union scale. With the overproduction of

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coal and the tendency of the non-union operator to reduce prices, an insurmountable obstacle to negotiations had been raised in 1920 and again in 1922. Affairs were allowed to drift to a break, because a break would increase prices and hence simplify the work of settlement. At the present time union wage agreements have been made, but there is dullness in the market, declining prices, part time em- [fol. 1920] ployment, closing of mines, a tendency for diversion of business to low-cost non-union fields, and a growing desire to seek relief from the inflexible union scale.

From now on the union mines will play a less important part as the capacity of the southern non-union mines has increased materially during the past two years. In 1922, these mines were able to produce approximately 60 per cent of the country's coal requirements, while in 1924 they could produce 75 per cent. The frenzied scramble for coal, so noticeable in the crisis of 1922, will be much less evident after 1924, unless future years chronicle a combination of strikes such as occurred recently when the miners struck in both the anthracite and bituminous fields at the same time the railway shopmen's strike prevented shipments of coal from non-union areas. The coal situation is settling down to the dead level which prevailed prior to the war, but today the railroad situation is much stronger, the non-union capacity is proportionately greater, and the competition of substitutes is assuming formidable proportions. With this historical background, the price-lowering factors will be discussed at greater length.

Overdevelopment of the Industry

Excess capacity is an outstanding fact in the bituminous coal industry and the resulting competition is driving the price of coal downward. This overdevelopment has been especially pronounced since 1914. Whereas the maximum annual demand for bituminous coal as measured by production was 579,000,000 tons in 1918, and for the five years 1917 to 1921, inclusive, averaged 516,000,000 tons, the mines are manned and equipped to produce from 700,000,000 tons, at the lowest estimate, to over 800,000,000 tons per year. For only brief intervals each year are the mines operated at their maximum capacity, the greater part of each year being spent in part-time operations. With the introduction of more modern machinery and operating methods, the efficiency of which have been amply demonstrated, the capacity of the present mines will be even greater. There is a present estimated excess of mine labor of from 150,000 to 200,000 men.

The above rapid expansion of capacity has proceeded through the extension of old mines and the addition of many new mines. Railroads tapping the coal fields have competed for tonnage from new mines, and by rate adjustments have expanded the markets for these [fol. 1921] new operators. The rules in effect governing the distribution of coal cars among the mines have also encouraged overdevelopment, for, by dividing the cars according to capacity to produce, these rules have put a premium on overcapacity. Large consumers

have bought coal lands and opened their own mines. Prior to 1916 the periodic strike in the organized fields contributed to this overdevelopment, strikes or threats of a tie-up coming with such regularity that their effect was anticipated and consumers, especially railroads, bought heavily in advance. This meant seasons of very active demand, which encouraged the development of new mines. Whenever such strikes were of more than usual severity, the non-union fields were greatly developed to meet the added demand for coal.

The extent of the overexpansion of the industry, the number of men employed, and the average days lost per year for the period from 1900 to 1921, are shown in the following table:

Year	Number of employees	Net ton production (mill. tons)	Estimated capacity (mill. tons)	Average days lost per year
1900	304,375	212	270	74
1905	460,629	315	457	97
1910	555,353	417	580	91
1915	557,456	442	674	105
1920	639,547	568	796	88
1921	663,754	415	836	159

With mining capacity and men to produce at least 24 per cent more soft coal than is required at peak demand and nearly twice the normal demand, there is an inevitable idleness of mines, which intensifies competition for business at all periods except during great business activity. The great majority of mines endeavor to remain in operation in off seasons in order to keep down their fixed charges per ton of output. This potential supply often double the market demand, results in severe competition and the price of coal under such conditions approaches the cost of production of the richer and more favorably located mines while others operate at cost or at a loss. This condition can influence prices in only one way and that is downward.

Relative Development of Union and Non-union Fields

Because of the overexpansion of the industry and the fact that there is now, and for a considerable period will be, a great surplus of [fol. 1922] men in the coal mining occupation, the future competition between union and non-union territory will be intense, with mine cutting a frequent occurrence. The non-union mines have lower labor costs, and a flexible wage scale that can be adjusted to market needs, and consequently they have expanded rapidly during the periods of strikes in the union fields. Extensive information is available showing in convincing manner the advantages possessed by the non-union operators and explaining why their rapid expansion led to the further unsettling of the industry, but only a few leading factors will be reviewed here.

A ten year average shows that in the non-union fields the workers have averaged approximately 55 days more of productive employment per year than in the union fields. This greater stability of em-

ployment, coupled with a lower and more flexible wage scale, reduces costs in the non-union fields and serves to promote still more the development of such mines. In the matter of wages alone, there is a wide differential. Outside men in non-union fields average $1.75 per day less than in the union fields. Inside union men average from $7.25 to $7.75 per day, while the majority of non-union employes are paid between $5.00 and $6.00 per day. There is a similar wide variation between wages of union and non-union pick miners and loaders. As union mine costs are higher, the development of more non-union mines is encouraged, thereby adding to the already overdevelopment of the industry, increasing the irregularity of employment, and further unbalancing the industry. No comprehensive solution of this problem has yet been offered.

Considered from the standpoint of wages, production and overhead charges, it is evident that the non-union operator possesses a material advantage which will turn an increasing proportion of the business to non-union fields. The economic factor that produced the instability in the past will be exceedingly difficult to control in the future because of the keener competition. If union wage rates are not adjusted, the non-union mines will command most of the business; if the unions sanction an adjustment in the existing wage scale, the reduction will have to be a material one in order to undercut the non-union rate. However, when union wage rates are lowered, it is more than likely that corresponding reductions will be made in non-union areas. To secure a fair share of the output, the unions must accept a wage scale comparable with that of the non-union miners. This means lower wages and greater production per man. Even with these [fol. 1923] concessions, the unions have no assurance that the non-union areas will not make still further reductions. The growing competition in this field can have only one result, namely, a driving down of costs, a narrowing margin of profit, and lower prices to the public.

The Railroads as Affecting Coal Prices

Freight Rates

Favorable freight rates have been a great factor in the past in the over-development of the coal industry, and there is nothing in present railroad tariff history to indicate a change in policy. In their efforts to develop additional traffic, railroads have offered exceedingly advantageous rates to operators who opened new coal mines, many of which were in non-union territory. An example of a rate differential that favors the outlying non-union territory is shown in the tariff to Toledo from five competitive points:

District	Distance to Toledo	Rate per ton	Length of a ton haul per dollar of freight
Pittsburgh, Pennsylvania	280 Miles	$2.39	117 Miles
Fairmont, West Virginia	340 "	2.39	142 "
Kanawha, West Virginia	338 "	2.39	141 "
Harlan, Kentucky	436 "	2.39	182 "
Oakdale, Tennessee	462 "	2.59	192 "

The same rate per ton applies to four districts having a mileage range from 280 miles to 436 miles. The advantage possessed by the non-union fields is shown by the fact that the rate per ton is the same, although the length of a ton haul per dollar of freight paid varied from 117 miles to 182 miles. The differential favored the newer fields in West Virginia, Tennessee and Kentucky. Favorable differentials to outlying districts bring more mines into competition, and thus tend to burden the industry with excess production capacity, labor and invested capital.

Improved Transportation Facilities

The recent improvement in trackage and equipment of the railroads removes a price raising factor which at times in the past contributed materially to increased coal prices. The physical recovery of the nation's carriers since early in 1922 places the coal consumer in a more favorable position than in the past decade, when frequent shortages of coal cars added to the tenseness of the situation and aided [fol. 1924] materially in the raising of prices. Car shortage came with annoying frequency and the fear of future shortages often made an already bad situation worse. During the disturbances in the coal fields in 1920 and 1922, the coal problem was greatly aggravated by the fact that the carrying capacity of the railroads had not kept pace with the expanding traffic needs of the country. In the last two years, however, the railroads have not only added an unusually large number of locomotives and freight cars, but they have put their equipment into better condition for service than it had been in years. The orders for freight cars in 1922 totaled 180,154, of which one-third were coal cars. Up to December 1, 1923, another 75,346 coal cars were put into service. The year 1924 has seen similar heavy additions to rolling stock, and all of the recent acquisitions have been of greatly increased capacity per unit. Such coal roads as the Louisville & Nashville, the Chesapeake & Ohio, the Virginian, and the Illinois Central have notably strengthened their position in trackage and terminal facilities, while other coal roads have made special efforts to increase their coal carrying facilities.

Reduction in Mine Operating Costs

The next decade will witness many reductions in the costs of operating bituminous coal mines. From the standpoint of both organization and management, the coal industry has lagged behind other industries and only during the last year or two have the coal operators realized the full significance of the competitive struggle before them. The bituminous coal industry is just entering the stage of reducing manual labor through the introduction of machinery. The importance of this change, both to the workman in reducing his toil and to the consumer in reducing the cost of coal, is evident when it is considered that about 70 per cent of the cost of coal at the mine is labor and more than half of this labor is for cutting and loading coal into mine cars. The use of mechanically

operated units with resulting lower costs is inevitable in the face of ever-increasing competition. A considerable number of loading machines have already been put in operation in the non-union mines, and the union mines must adopt the same labor-saving devices with the full co-operation of the unions, or suffer in the competition for business.

In the recent survey of the industry made by the United States Coal Commission, it was found that the cost of coal at the mines was reduced 30 per cent through the use of loading machines. A detailed analysis of costs, output, etc., was made by a group of the leading industrial engineers and the tabulation of their data reveals a marked saving in the machine operated mines. In order to obtain a true comparison of production costs, observations were made on machine loading in a mine recently changed from all hand loading to all machine loading. The table which follows shows in the first column the results of a six day performance of two machine loaders, and in the second column the results of an eight day output of hand loaders:

	Machine operation	Manual operation
Numbers of days run	6	8
Miners mining by the car	4	53
Other men in operations	69	65
Total men underground	73	118
Man days	438	944
Total cars loaded	1,186	1,428.5
Total tons loaded	4,886	5,868
Total tons per day	814	733
Tons per man loader per day	380	13.8
Tons per machine per day	11.2	
Tons per man per day		6.2

The above table shows a material reduction in the number of men underground, and with a longer period of operation it is estimated that this number can be further reduced by more systematic supervision and distribution. The use of the large machine loaders allows a reduction in total mining labor force of nearly 40 per cent.

The introduction of loading machines decreases output as well as decreases the numbers of miners. Certain operators have estimated from their cost records that by running a mine full time their overhead charges and non-productive labor costs can be reduced nearly 50 cents per ton. Similarly, increases in production with the same overhead and equipment will produce large savings per ton of output. By more uniform operation, elimination of lost time, and adoption of better methods, a remarkable opportunity is afforded for increasing production without increasing either inside or outside equipment or labor cost. With such reduced costs, the mine becomes a "low cost producer," with more uniform operation throughout the year. In addition to the lower costs of handling coal, machine loading leads to more systematic undercutting, haulage costs in the mine are reduced, the quantity of timber required is reduced, the

roof of the mine falls less readily because of the more rapid progress, and in many operations less working room is required. Inspection [fol. 1926] and supervision is more effective because of the smaller area worked, the cost of drainage and ventilation is reduced for the same reason, the cost of plant construction per ton is reduced through larger production per man, and the recovery of coal is increased from 5 to 10 per cent.

Recent years have witnessed important developments in coal mine equipment. The cutting machine has eliminated cutting by hand. In machine equipped mines, the electric drill is coming into use and underground loading holds out great possibilities. Loading machines have been a success in metal mines for years but are just reaching the stage in coal mining where they may be called an operating success. The motor and the electric hoist are superseding the mule for gathering coal from working places. For outside work belt conveyors are frequently used for distances of several thousand feet for delivering coal to barges, etc. The more extensive introduction of such improvements means lower coal prices.

Competition with Oil Industry

Fuel Oil.

The rapidly increasing demand for fuel oil is displacing coal for many industrial uses and is intensifying the difficulties in the coal industry. At a time when a large part of the coal industry is suffering from an apparently endless war between capital and labor, fuel oil is assuming rapidly increasing importance as a competitive factor in industry and in the homes. Prior to 1923 short-sighted coal operators were openly ridiculing any reference to fuel oil as a possible competitor, but they now realize and admit the serious inroads it is making in their disorganized industry. The 1923 installations of oil-burning apparatus displaced coal to the extent of 41,000,000 tons per year, the railroads accounting for the equivalent of 24,000,000 tons, industrial users 12,000,000 tons, and domestic users 5,000,000 tons. These displacements are for 1923 only, and are over and above previous fuel oil installations. The 1923 installations of fuel oil apparatus represented a displacement of about 8 per cent of the country's soft coal output. The 1924 fuel oil installations are equally impressive. It is now conceded by both coal and oil producers that fuel oil is superior to coal in such processes as annealing and enameling where uniformity of heat, not obtainable with coal firing, is required. Coal, therefore, not only suffers from a complication of internal economic troubles, but these ailments are aggravated through increasing demands for a competitive product, which in this instance is generally superior in cleanliness, uniformity of heat, convenience, etc.

[fol. 1927] Steamship Fuel.

The United States Coal Commission estimates that 2 per cent of the total coal production in the United States is for steamship fuel. Because of its superiority over coal, the use of fuel oil has increased

at a tremendous rate during the past few years. A large part of the ships now under construction are equipped for fuel oil consumption. The decline in coal loadings for fuel purposes at the principal ports of the United States and the great increase in the use of fuel oil are shown in tabular form in the Department of Commerce figures (Survey of Current Business, Department of Commerce, August, 1924, pages 164-165)

Fuel consumption by vessels

	Coal (metric tons)	Index (1919=100)	Fuel oil (000 barrels)	Index (1919=100)
1913 monthly average	642	106		
1914 " "	606	100	217	19
1915 " "	620	103	297	25
1916 " "	650	109	461	39
1917 " "	574	95	492	42
1918 " "	461	76	550	47
1919 " "	604	100	1,160	100
1920 " "	780	129	2,192	188
1921 " "	629	104	2,256	194
1922 " "	343	57	2,641	228
1923 " "	379	63	3,137	268
January, 1924	423	53	3,159	270
February, "	345	57	3,145	269
March, "	393	50	3,069	265
April, "	347	57	3,508	303
May, "	370	61	3,854	328
June, "	341	56	3,650	312

Superpower

The remarkable development of the Superpower system will cause a substantial reduction in coal consumption and thus tend to drive the price of coal still lower. During the next ten years tremendous developments will take place in the hydroelectric industry and in the substitution of large steam generating stations for the numerous small steam power plants. There are still vast undeveloped water powers in the United States and the near future will unquestionably see many of them developed. Some of these have not heretofore been developed simply because of their magnitude and the limited area of transmission. The latter problems are now being rapidly solved. Some of these great water powers are located far from the coal fields, and their development will greatly reduce the use of coal in those regions, the latter commodity now being exceedingly costly [fol 1928] at remote places because of the long haul. The industrial world is everywhere turning toward the development of water power wherever practicable and its substitution for the use of coal. The recent trend in the above direction in the United States is best shown in the following extract from the annual report of the Federal Water Power Commission for the year ending June 30, 1923:

"Applications involving an estimated installation of 21,500,000 horsepower, permits and licenses issued for an aggregate installation of 7,500,000 horsepower, and 2,400,000 horsepower built or building under license of the commission is the record of three years' administration of the Federal Waterpower Act. In this period the Commission has dealt with applications involving six times as much horsepower, has issued permits and licenses involving three times as much horsepower, and has twice as much horsepower built or building as the individual departments working independently in the preceding 20 years. * * * * When it is realized that only 1,400,000 horsepower had been constructed under Federal authorization in the years preceding the passage of the act and that at the time of its passage the aggregate installation of all water power plants in the United States amounted to only 9,000,000 horsepower, the satisfactory character of the legislation and the substantial results accomplished in its administration are apparent." (Third Annual Report of the Federal Power Commission, June 30, 1923, page 1.)

The application on file with the Federal Power Commission, if granted, will cost approximately as much as the total amount of money now invested in the electric light and power industry. It is anticipated that all of the 20,000,000 horsepower applied for will be developed and in operation by 1930, with additional developments under way by that time. The huge network of Arizona, California, Oregon and Washington comprises the greatest superpower zone at the present time. Five states in the south are connected with 900 miles of trunk lines. Forty-two plants in these states, capable of developing over a million horsepower, are now interconnected. In Idaho, Utah and Montana great transmission systems are being linked together. The merging of large companies in middle western states like Wisconsin, Indiana, Illinois, Michigan and Ohio, is occurring frequently. Equally impressive developments are under way in West Virginia, Pennsylvania, Ohio and Kentucky. These great generating systems will be interconnected to the end that there may be the greatest assurance of continuity of service and the least possible duplication of generating plants, transmission lines, etc.

Before making an analysis of the fuel economy which will result from the use of larger steam driven electrical units and the purchase of wholesale power, a brief statistical survey of certain salient features of the electrical industry should be made. The developments [fol. 1929] of the past five years now make it apparent that they were but the beginning of a vast electrical system with far-reaching effects on industry. The development of steam power and hydroelectric plants during the last three years, as shown by the capital expenditures tabulated by the Electrical World, is as follows:

	1921	1922	1923
Steam electric plants	$149,858,000	$190,543,000	$289,417,000
Hydroelectric plants	45,808,000	63,730,000	74,396,000
Transmission systems	69,907,000	75,588,000	125,200,000
Distribution systems	59,977,000	84,156,000	103,130,000
Total	325,770,000	324,016,000	592,143,000

Power Production and Fuel Consumption

In order to appreciate the tremendous growth of power production in the last decade, the following table is submitted, showing the production in kilowatt-hours by sources for each of the last five years and the total production for the years 1907, 1912 and 1917. The data are taken from Moody's "Public Utilities" (1924):

Year	Kilowatt hours (millions): Hydro-electric	Steam	Total	Fuel consumed: Coal (000 short tons)	Fuel oil (000 barrels)
1907			5,862		
1912			11,569		
1917			25,438		
1919	14,698	24,315	38,921		
1920	16,150	27,405	43,555	37,243	13,122
1921	14,971	26,005	40,976	31,568	12,014
1922	17,249	30,450	47,700	34,199	13,185
1923	19,643	36,335	55,978	38,879	14,707

In spite of the enormous increase in power production since 1920, the amount of coal consumed has increased only slightly, due to ever increasing economies in fuel consumption. The demand for power has increased to such an extent that the utility operators are obliged to increase their generating capacity by about 2,000,000 horsepower annually, and to make corresponding extensions to their transmission and distribution systems. The following table shows the growth of generating capacity in central station steam power plants and hydroelectric power plants:

(fol 1930) Rating of Generators in Central Stations, in Kilovolt-amperes, as of January 1

Year	Steam power plants	Hydro-electric power plants
1903	1,144,000	350,000
1908	2,200,000	1,005,000
1913	4,334,500	2,082,100
1918	6,600,000	4,519,500
1923	13,486,000	6,738,000
1924	15,505,000	7,390,000

The above figures show the recent remarkable utility development. As the above rate of increase will undoubtedly continue, it was deemed necessary by both the utilities and the public to make an exhaustive analysis of future requirements, water power resources, saving in fuel, etc. The Superpower plans are the result of these surveys and represent a comprehensive scheme to develop available water powers and to make the most economical use of present and future

[fol 1942] Comparative Financial and Operating Statistics of Selected

Number of kilowatt hours generated in 1917				Number of stations
Under 200,000				140
200,000	but	under	500,000	65
500,000	"	"	1,000,000	42
1,000,000	"	"	2,000,000	26
2,000,000	"	"	5,000,000	30
5,000,000	"	"	10,000,000	19
10,000,000	"	"	20,000,000	11
20,000,000	"	"	50,000,000	15
50,000,000	"	"	100,000,000	8
100,000,000	"	"	200,000,000 (a)	4
200,000,000	and	over		9

(a) These four plants operate under unusual circumstances. They furnish

d Electric Generating Stations, Grouped According to the Numb
Used in 1917

Average dynamo apacity r station	Kw hr generated per kw capacity of dynamos	Expenses per k			
		Supplies and materials	Salaries and wages	Fuel	Miscel laneous expenses
118	703	.967	3.285	3.103	.533
288	1,108	.554	2.148	2.286	.532
532	1,233	.392	1.409	1.476	.523
850	1,560	.341	1.289	1.297	.349
1,718	1,822	.297	.833	1.027	.249
4,166	1,685	.218	.797	.999	.287
5,949	2,183	.109	.481	.690	.258
12,986	2,120	.106	.484	.602	.243
29,858	2,482	.131	.443	.520	.125
46,260	2,768	.048	.288	.441	.152
86,260	3,120	.130	.494	.362	.292

very large part of their current in bulk to other companies or sell to very

r of Kilowatt-hours Generated and the Type of Primary Power

lowatt hour sold (cents)

Insurance	Taxes	Depreciation	Interest	Total	Pounds of coal per kw. hr. generated
.152	.208	.521	.489	10.080	18.26
.155	.251	.335	.617	7.401	11.88
.082	.204	.339	.462	5.145	8.71
.076	.211	.450	.564	4.913	7.32
.052	.178	.273	.427	3.535	5.78
.046	.186	.367	.430	3.438	4.35
.014	.153	.117	.312	2.166	2.95
.021	.170	.154	.284	2.173	3.34
.011	.137	.196	.298	1.955	3.32
.012	.090	.106	.201	1.387	2.55
.021	.204	.133	.223	2.038	2.49

large wholesale consumers

steam power plants. The immense saving in fuel, transportation and other operating costs to be derived from such plants has been carefully estimated in the several Superpower reports recently published. Great economies in production costs can be secured from the effective interconnection of the utility systems, these economies comprising a reduction in the amount of reserve equipment, a wide diversification of use through increased industrial power consumption, a more advantageous use of water power to carry peak loads, and the development of better load factors. These large plants can operate with greater economy in overhead costs, they can accumulate larger coal reserves at times of favorable markets, many of them can use cheaper grades of coal, and they can operate with much greater fuel efficiency than small and isolated plants. These savings can be brought about through the construction of large plants with individual capacities ranging from 200,000 to 500,000 kilowatts and using generators of not less than 20,000 kilowatts capacity each. In the northeastern district alone this change would result in an estimated saving of 50,000,000 tons of coal per year, or over 10 per cent of the present output of the United States. The saving for the entire country under the Superpower plan would, therefore, be very much greater and its effect on the coal market pronounced.

The operating advantage of large plants is shown in the table submitted below. This table, the data for which were taken from the 1917 census report, groups a selected list of steam power plants according to the kilowatt-hours generated. The coal efficiency of the [fol. 1931] various sized plants in 1917 is shown in the last column. It is important to note from this table that the fuel consumption by the large plants is very much less per unit of output than that of the small plants, and as the data in question are based on conditions effective in 1917, they do not reflect the great progress in power plant design and operation that has been accomplished subsequent to that date and which indicates even greater advantages for the Superpower projects. The table follows:

(Here follows side folio page 1932)

[fol. 1933] The present trend in the utility field is strongly toward the larger units and consolidation with the resulting low unit fuel consumption. The 1922 preliminary census figures show a material decrease in the number of electric stations as compared with the 1917 census, the number of commercial establishments declining from 4,224 in 1917 to 3,775 in 1922. The change in number and capacity of the electrical units during this period is further shown by the fact that the number of steam engines and turbines declined 12.8 per cent, but the horsepower increased 9.7 per cent, the number of water wheels and turbines increased 3.2 per cent, and the horsepower 36.1 per cent, the kilowatt capacity of the dynamos increased 59.1 per cent, and their kilowatt-hour output approximately the same.

In the survey of the district between Boston and Washington, a study of the 90,000 manufacturing establishments in the zone showed that by 1930, through the maximum economical use of purchased electrical energy, these plants could save $190,000,000 annually above the fixed charges occasioned by the motor equipment necessary to receive and use this power. The annual saving in coal was estimated at 20,625,000 tons. The saving by the electric utilities under Superpower plans was estimated at approximately 20,000,000 tons. In many instances coal will be converted into electricity near the mines and the item of freight, a large factor in coal prices, will no longer be a serious element to a large class of consumers. In the industrial region of the eastern states, much of the coal is produced in or near regions where sufficient water is available for condensing purposes. Many of the great manufacturing establishments of the United States are located sufficiently close to the mines and to existing or proposed steam and hydroelectric power plants that high tension transmission lines can deliver the necessary power with but little transmission loss.

Within the northeastern Superpower zone there are 36,000 miles of railroads, 19,000 miles of which could be profitably electrified with an annual saving of coal estimated at 10,210,000 tons. Electrification of many railroads is only a matter of a few years. Many have almost reached the limit of their capacity and must either be reconstructed within ten or fifteen years, with heavier rails, larger and heavier equipment, wider gauges, lower grades, larger tunnels, etc., or the present system must be electrified to handle the constantly increasing traffic. The electric locomotive, with its greater tractive power, lower operating costs, greater speed, and other operating advantages would enable the railroads to meet the increased traffic [fol. 1934] demands without requiring the complete reconstruction of their properties. Again, with the use of electrical energy in industry instead of coal, a large part of the existing freight traffic will be taken off the rails and the present facilities thereby released made available to meet future traffic requirements. The next decade, therefore, will unquestionably witness great strides in fuel economies in utility, industrial and railroad operation, all of which will result in a saving in coal and thereby leave the coal market more subject to competition and tend to lower prices to consumers generally.

Within the next few years a further decided impetus will be given to fuel economy in the industrial field. With the slow but gradual recovery of industrial Europe, the American manufacturer will find that the days of "cost plus" are gone so far as his generation is concerned. Competition, both in quality and price, will become increasingly acute during the coming years and the American manufacturer will be compelled to study costs much more closely than in the boom days of the war and early postwar period. Moreover, with the closing of the immigration gates, greater resort must be had to machinery and better human relations must be maintained. A reviving Europe, driven by sheer necessity, can still be successfully met by high priced American labor, if fuel and other costs are favorable and large scale production is encouraged. Superpower unquestionably will be a necessity in meeting this increasing competition.

Conclusion

Future years, therefore, will continue to see the coal industry the victim of adverse economic circumstances. Many of the economic factors which have contributed to the present difficulties of this industry will probably remain unsolved for many years to come. It is impossible to make any study of this subject without being forced to the conclusion that the ultimate adjustment of this industry to the conditions which now so vitally affect it will be accomplished by the elimination of many high cost producing fields and the concentration of the coal business in those centers which can offer the lowest costs to the consumer. This will be brought about through greater production by the low cost mines and the use of substitutes in the form of fuel oil and hydroelectric power and also power produced by large steam generating stations. Uneconomic wage levels and excessive production costs have always been the greatest incentives for the invention of labor-saving devices and the development of sub-[fol. 1955] stitutes, and nothing has contributed more to the present urgent development of water powers and consolidation of public utilities than the persistent increases in the price of coal, together with the ever recurring hazard of strikes, car shortages, etc. The coal industry is being punished for its own mistakes which excessive demands in various forms have occasioned, and the inevitable reaction and readjustment will bring declining prices to the consumer.

In the face of these conditions it is not probable that the open market price for coal on December 31, 1923, also reflects the fair average price for such coal over the next 18 years. With every indication and development favoring lower coal prices in the future, the valuation estimate which Mr. Davis founded on his assumption regarding the continuance of the December 31, 1923, coal price level is clearly excessive.

It is not, however, to be inferred from the foregoing analysis that the future of the coal producing districts in West Virginia and Kentucky is one of long continued depression. The latter condition would obtain if the coal industry under present industrial developments was to be gradually eliminated. Such, however, is not the case. The coal industry is today depressed because (1) it is overdeveloped, (2) it is being supported on an uneconomic level by artificial devices, and (3) the public is being forced to use new methods and substitutes to reduce to a minimum the burden which the above conditions have created. A suspension of economic law can be accomplished for a short time, and for a somewhat longer period only when the attempt is supported by extraordinary conditions as war, strikes etc. The situation that has developed in the coal fields can be compared with the effect of a dam in the channel of a river. Such a structure may restrict the natural flow for some time, and would accomplish this purpose for a longer period if there was at the same time a prolonged drought. It could not, however, hold back the river permanently without the water finding some other avenue of escape. This is exactly what has been taking

place in the coal industry during the last ten years, for the naturally most favored production fields have been restricted in output by an economic dam and the full coal demands which they should have supplied have been met from other areas. In this manner, an old and profitable industry has been disturbed by artificial forces which have operated only to stimulate new territories at the expense of those which it was intended to benefit.

Normal conditions will be restored in the coal industry when natural laws are permitted to function, and this does not involve [fol 1936] an increase in the price of coal. It will ultimately be attained by allowing the regions most favored by nature in this respect to produce coal on an immense scale and at low cost to the consumers as they can do when production is concentrated in low-cost fields. Prosperity will then return to those coal fields which were able to establish their economic superiority before artificial restrictions were applied.

The coal industry is learning the lesson which every industry must learn when it seeks to escape economic law by legislation or other artificial devices. Witness the recent depressions in such basic industries as wheat, leather, copper, fertilizers etc. In each of these instances the lesson has been learned and after the inevitable housecleaning which such tampering made necessary, the way has been prepared for a more substantial and greater prosperity than was previously known. The wheat farmer has learned something of fundamental economics and with him the country bankers and merchants who are now entering upon a period of real prosperity. The copper and leather industries, after the depression which followed the war stimulated period, have listened to sound economic advice and the investment world is now turning with favor to their capital needs. Other instances could be added, if necessary. The same economic laws are also working to correct the unsettled conditions in the coal fields and when their meaning is understood and fairly accepted, genuine prosperity will come to those sections wherein the richest coal deposits have been developed and this without an advancing price level. West Virginia coal fields are today the most advanced in meeting this necessary readjustment.

[fol 1937] HAGENAH EXHIBIT 3

[fol 1938] Analysis of Appraisal of Leaseholds and Natural Gas Rights by Mr Uebelacher

Valuation Theory Adopted by Mr Uebelacher

Mr Uebelacher has filed an appraisal report setting forth the reproduction cost new as of December 31, 1923, of all the property of the United Fuel Gas Company. As a part of this appraisal he submitted a study of the value of that company's leaseholds and natural gas rights, his conclusions regarding this class of property being as follows:

Estimated value of proven and probably productive acreage	$33,155,422
Estimated value of unproven acreage	3,293,754
Total	36,449,176

The value of the above property is based on the following principle as set forth in his report:

The measure of the value to the owner or lessee of gas in the ground is the difference between the prevailing market price at which such owner or lessee can purchase gas delivered to the field mains and the cost to such owner or lessee of producing and maintaining with his own wells an equivalent supply of gas at the same point of delivery.

In applying the above principle, Mr. Uebelacher found it necessary to arrive at the following three facts as having a material bearing on the application of his theory:

(a) The total cost to the owner or lessee of producing and maintaining with his own wells and equipment an equivalent supply of gas corresponding in delivery conditions to those under which the gas is purchased. This total cost must include operating expenses and depreciation, amortization of the value of the equipment used and a fair return upon the investment in such equipment.

(b) The prevailing market price at which gas can be purchased as controlled by delivery conditions.

(c) The estimated recoverable content of the proven and probably productive acreage.

Briefly, Mr. Uebelacher's method of appraising the natural gas reserves is to find what he describes as the fair market price for gas in the community which the company serves and to ascertain the difference between such market price and the cost to this company of supplying the same service under corresponding delivery conditions. [fol. 1939] This difference he describes as the value of the gas in the ground, and multiplying such value per unit by the estimated recoverable gas, he arrives at the valuation results above set forth. This theory contemplates the consideration of a sufficient number of contracts to establish beyond a reasonable doubt the fair market value of the gas, the accurate analysis of the costs of the United Fuel Gas Company covering both operating expenses and fixed charges on a basis comparable with the method used in ascertaining the so-called market value, and finally, the recoverable content of the gas acreage.

It will be noted that the above theory is substantially the exchange theory of value used by Mr. Davis. The principle is the same, although it varies in the form in which the supporting data are applied. These data, like those compiled by Mr. Davis, reflect a series of hypotheses, assumptions and estimates, rather than known conditions and costs developed under public regulation. Mr. Uebelacher's

theory is based on the hypothesis that certain contracts which have been arrived at through negotiations between the gas purchaser and the consumer with little or no supervision on the part of the regulatory authorities, establishes the fair market value of gas to such an extent that the amount by which this exceeds the cost of supplying a similar service by the United Fuel Gas Company may be capitalized as measuring the value of the latter's gas reserves. While Mr. Uebelacker is not dealing with a substitute fuel in determining the value of this company's product, he is nevertheless capitalizing its natural resources on the basis of the average cost of similar service as supplied by other companies under different circumstances and presumably not so favorably located as is this company. This principle, when carried to its logical conclusion, means that the higher the rate charged for gas in the contracts in question, the more valuable are the gas lands and leasehold property of this company, and consequently the higher the rates which the public should pay for its product under public regulation.

Assuming that the contracts selected by Mr. Uebelacker fairly indicate the market value of gas in the territory in question, it is obvious that he is appraising the gas reserves by capitalizing the earning power of this company as a natural monopoly rather than following the practice which courts and commissions have adopted in valuing property devoted to the public service. The contracts in question have apparently been made by the parties thereto in each case dealing at arm's length, the purchaser accepting a price at which [fol. 1940] he will be able to make that margin of profit on his investment which to him seems proper in his business, and based on the comparative cost to him of a substitute service, while the company is endeavoring to secure to itself all the profit the traffic will bear. The purchaser in such instances is generally not restricted to a reasonable return in terms of utility regulation, but is guided more by competitive conditions in his own business. The gas company, on the other hand, is limited only to such rate as just falls short of inviting competition from other supply companies. It is the earning power of the company here under consideration, as compared with the average cost determined from the above contracts, that is capitalized by Mr. Uebelacker. Obviously, the value of the gas reserves on this basis depends entirely on the accuracy or inaccuracy of the market price or value of gas as developed by this method. If he is able to compute a high market price, the value of this company's gas reserves is correspondingly increased by this theory; to the extent that his market value is reduced by reason of conditions beyond his control, the value of the reserves is lowered.

Carrying the analysis further, it appears that Mr. Uebelacker is arguing in a circle. Whether or not the contracts which he selected establish a market price is highly controversial, but, assuming that they do, it is readily apparent that any application of his theory defeats its own purpose. This can best be illustrated in the case of coal. Instead of six gas contracts, let us assume six competing coal mines of various capacities and whose mining costs per ton naturally

differ. Some of these mines would have natural advantages over others and consequently could make the same margin of profit on a lower selling price than some other company merely because their operating costs or fixed charges per unit were less. If a low cost mine has great capacity, and this illustrates how important the question of capacity really is, it could take advantage of the market price, if this were determined by average costs as Mr. Uebelacher suggests and produce so much coal as to force the discontinuance of the high-cost mines. The latter would be eliminated in the inverse order of their production costs, the highest cost mine dropping out of the competitive race first and followed in turn by the other mines until finally the market reached the level of economical production by the most favored producers. The higher cost mines, if they remained in operation, would have to accept lower profits. This is precisely what happens in a competitive market and illustrates how markets are made. In other words, that mine which combines the [fol. 1941] most favorable costs with the largest productive capacity will fix the market, and its high cost competitors are at its mercy unless an agreement to restrict competition is effected. No such competition and market price can be proven by six individual contract rates.

The above method does not measure value in an economic sense and even more clearly does it not measure the value of utility property. The difference between such estimated market price and the cost of producing the commodity in question from a single source does not furnish a basis for capitalizing this advantage as proof of value of the source of such commodity. The market price of gas, if such a conception is possible, is so uncertain and fluctuating as to furnish no reliable basis for an appraisal. In applying this theory to what is at best an uncertain situation, Mr. Uebelacher has ignored what is probably the most important single factor in determining the market value or price he seeks.

Referring to specific items in Mr. Uebelacher's report, it will be noted that there is a wide difference in the contract rates, these ranging from 8 cents per thousand cubic feet to 22.6 cents per thousand cubic feet, the latter being the cost of gas delivered by the United Fuel Gas Company at Cedarville. The advantage of this company, as computed under the several contracts, also varies widely, ranging from 2.5 cents to 11.50 cents. The contracts in question pertain to different companies, and are operative in different communities. Surely these few contracts cannot be said to provide that broad competition which must be present before the exchange theory of value can be applied. A present open market in this service is economically impossible. If it were possible to have such an open market and if free competition prevailed in regard to these contracts, it is obvious that the company which could supply gas on a profitable basis at 8 cents per thousand cubic feet would obtain whatever portion of the total demand in this market it desired and this to the extent of its entire capacity. This is readily demonstrated. If its capacity were small, or the exhaustion of its gas reserves about to be reached, it would be a smaller factor in determining the mar-

ket price of gas than the indicated ratio of one to six in the number of contracts considered. That the companies associated with the low costs mentioned by Mr. Uebelacker are not selling their gas at the high prices indicated for Cedarville or in Pittsburgh may be explained by the fact that their supply is so small as to make the necessary extension of pipe line facilities inadvisable, or the distance, as well as other obstacles, may restrict them to the very districts in which they are operating. This is not indicative of such an [fol. 1942] open market as would furnish the basis for determining the value of a single gas reserve without taking into consideration many factors other than the few mentioned by Mr. Uebelacker.

The fact that certain high cost producing companies have been able to make such contracts as Mr. Uebelacker considered is the most convincing proof that there is no such competition in this field as furnishes the basis on which the exchange theory of valuation respecting competitive commodities may be applied. Substituting the names of coal mines in each of the contracts listed on page 44 of his exhibit, and assuming that each is furnishing the same quality of coal and that production costs are as widely apart as the gas costs indicated in his study, what, it may be asked, would become of the mine compelled to charge nearly four times as much for its coal as another competing in the same field? Are there many instances in competitive business where companies have long been able to remain in operation when their costs exceeded those of their most dangerous competitors by the margins indicated in these several contracts? Could such condition prevail in private business except under agreements not to compete, which are but agreements to set aside economic law?

In the case of competitive commodities, such as coal and pig iron, the product from each mine or furnace seeks the level which its costs compel. The markets of individual concerns are constantly shifting because of such factors as productive capacity, rate of production, efficiency of labor, managerial skill, changes in freight rates, etc. A producer may be driven from one market only to adjust his costs and regain his former position, or possibly gain other markets. Unless he can meet these conditions, his business fails. The above conditions do not apply in the remotest degree to the United Fuel Gas Company, which is a natural monopoly and as such subject to public regulation. If the commission has authority to fix the rates for service by this company, it can affect the market value of its gas reserves. If it can change one contract, it can change others and thereby substantially change that market price or value to which Mr. Uebelacker refers. If in each instance the contract rate is to be based principally on the cost of production, plus depreciation and a reasonable return, the substantial difference in rates which would result for the different companies in the state would be the best proof that there is no such open market for the products of these utilities as to establish the value of the gas. If the commission has not the right to fix rates, there is no purpose in seeking a rate in [fol. 1943] excess in this instance. The recognition of the right to prescribe rates for this company carried with it the recognition that

the commission may fix rates in individual instances of industrial consumption which may be even higher or lower than those which Mr. Uebelacher considered. How, then, can the gas reserves of the United Fuel Gas Company be appraised on the basis of their advantages as compared with the rates charged under six specific contracts for service, which services by their very nature are not competitive, wherein the costs vary widely, and in respect to which the volume of production has not been considered?

Further proof of the highly speculative and hypothetical character of the data on which both Mr. Davis and Mr. Uebelacher have based their appraisals of the gas reserves is found in the latter's assumption of a delivery rate of 30 cents per thousand cubic feet for the company's entire product for industrial use in Pittsburgh. This rate, it was said, "compares favorably with the cost of hot producer gas," and is also supported by the opinion of natural gas men that the steel industry would readily pay that price for large quantities of such fuel delivered uniformly throughout the year. Based on this rate for the company's entire product, Mr. Uebelacher finds that the company's gas reserves are worth 7.188 cents per thousand cubic feet, which, standing alone, would support on his basis an appraisal value for the gas reserves of at least 40 per cent in excess of his estimate of $33,000,000.

Against the above data, Mr. Davis sought to prove that the proper cost of hot producer gas as a substitute fuel was 35 cents per thousand cubic feet, and on this basis he also appraised the gas reserves at $32,458,000. Thus, so lacking in scientific justification and stability are the theories advanced by Messrs. Davis and Uebelacher in their appraisal of the company's gas reserves that whether the cost of the next most advantageous substitute in the same market and devoted to the same service is placed at 35 cents as an average cost for 18 years or at 30 cents as of 1923, the result as affecting the company's values is approximately the same. Both estimates cannot be correct. If the estimate by Mr. Davis is right, the value of the company's gas reserves on the basis of Mr. Uebelacher's theory would be greatly in excess of the amount shown in the latter's report, but should Mr. Uebelacher's estimate of the cost of such substitute fuel be right, Mr. Davis' final value of the reserves would be drastically reduced. So large a variation in the basic data on which the value of this [fol. 1944] property is predicated must either prove the uncertainty of the facts on which the exchange theory can be applied or the failure to apply such theory correctly.

Application of Exchange Theory to Data Compiled

Granting for the purpose of analysis that the six contract prices cited by Mr. Uebelacher establish the market value or price for gas and that 5 cents is a reasonable value of the company's gas supply in the ground, Mr. Uebelacher has not correctly applied the facts in his report. He appraises the value of the gas reserves on the basis of 5 cents per thousand cubic feet multiplied by the estimated content of the field, and on the amount so obtained he allows the

company a return of 5 per cent and in addition thereto an amortiz
tion charge. This is incorrect. To apply his theory properly, M
Uebelacker should have added to the operating expenses of the com
pany a sum equal to 5 cents per thousand cubic feet withdrawn
from the gas reserves and no further charge should be made fo
return on the investment or amortization. There can be no charg
in the operating expenses for return or for amortization on the ga
in the field after that drawn out has been charged at its fair marke
value. If the value of the gas taken is 5 cents per thousand cub
feet, that amount, plus the direct operating expenses, must be in
clusive of all charges pertaining thereto. The owner cannot sel
his product at the market price and then seek to obtain in additio
thereto another charge to cover the return on his investment in th
entire field. Return, amortization, etc., must be paid out of the
cent value or cost per thousand cubic feet. If this 5 cent charge
sufficient to provide the owner with a reasonable return on the valu
of his property from which the gas is taken, he possesses a good in
vestment. If such market value for the gas taken will yield him mor
than a reasonable return, it is to that extent more valuable than
indicated by the above referred to 5 per cent return. If, on the othe
hand, the sale by the owner of his natural gas production at th
market price will not yield him a reasonable return, the loss, i
there is any, falls on the owners and not on the public. This
obvious because if the 5 cents per thousand cubic feet represents th
market value, nothing further can be added to that amount becaus
to do so would result in a final cost in excess of the market valu
and this would prevent the sale of the company's product at th
ascertained market price.

That all charges incident to the supplying of a commodity o
delivery of a service must come out of the market value of the com
[fol. 1045] modity or service is one of the elementary laws of busi
ness. The market price is the maximum sum that can be collecte
and is not an amount to which other charges may be added. Mr
Uebelacker accepts the market value as determining the value o
the company's product under ground, but in compiling his cost
to be met by the rate for gas he adds charges which bring his tota
in excess of the market price. When his costs are applied correctly
there is no large profit to capitalize and hence no such enormou
value as is claimed.

An illustration of the impracticability of applying his theory
shown in the recent experience of the copper mining companies
During the last few years the price of copper has tended downward
with the result that many high-cost producing mines have discon
tinued operation and others have been operating with little or n
profit. As the demand for copper decreased the low-cost mine
were able to retain the business by lowering their selling price be
low the level at which some competitors could survive. For exampl
the Kennecott Copper Company and the Chile Copper Company
both low-cost producers, have been operating under very favorable
conditions as to output and profit, while the Anaconda Copper Min

ing Company, one of the largest producers and whose operating costs per pound have exceeded by from 50 to 60 per cent those of the above two companies, has been operating on a greatly restricted basis and with little profit. During this time the market for copper has ranged from 13 to 14 cents per pound. If the unit costs of the Anaconda company were 11 cents, the value of its ore in the ground, in a period of 13 cent copper would be, according to Mr. Uebelacher's theory, 2 cents per pound. The mining costs of the Chile company are about 6 cents per pound, making the value of its reserves 7 cents per pound, to be applied to the recoverable content. In appraising the value of the latter's mine, the company could not multiply such content by 7 cents and include in its operating expenses charges pertaining for return and amortization of such value would result in a cost to the public in excess of 13 cents per pound. To do so would be to develop a price in excess of the market and copper could not be sold on that basis. The 7 cent margin or advantage of the Chile company is therefore all that can be added to its mining costs and must cover the company's requirements for return on the investment, amortization, etc.

[fol. 1946] HAGENAH EXHIBIT 5

[fol. 1947] Proportion of Gas Reserves Presently Used and Useful

In the reports prepared by Mr. Ralph E. Davis and Messrs. Ford, Bacon & Davis, consulting engineers, covering the property of the United Fuel Gas Company, it is contended that the present value of the gas reserves owned by this utility is approximately $33,000,000. The unsound reasoning by which such results were obtained has been analyzed in other memoranda, for both appraisals reflect a conclusion based on the exchange theory of value. As opposed to these appraisals it is believed that the book cost of the property as determined by Mr. Jirgal and aggregating $6,732,920 more correctly reflects the fair value of the property in question.

Accepting, for the purpose of further analysis, the conclusions of the above engineers, but not admitting the application of their theories nor the accuracy of the results obtained, it appears that not all of the gas reserve which was appraised by them is a part of the presently used and useful property of the company. The record shows that the supply of gas contained in the reservoir appraised by the engineers is sufficient to meet the reasonable requirements of the company over a period estimated at 18 years. The mere ownership of such a reserve, however desirable from the standpoint of the stockholders and also beneficial to the public which the company serves, does not imply that the reserve in question is all used and useful property. On the contrary, this extensive gas reserve is in large part exactly what the term implies, namely, a reserve for future use, and only such portion as is rea-

sonably necessary for the present and early future can be considere
as a part of the rate base. The remainder of the gas reserv
must be regarded as an investment by the company, acquired f
the benefit of the public, and to be gradually absorbed in th
rate base as needed at the then prevailing market price.

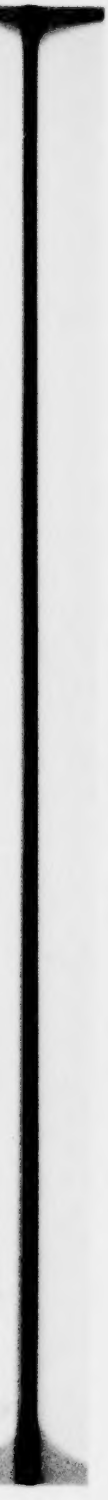
It has been the practice of public service commissions through
out the entire period of utility regulation to consider carefull
any property acquired for future use on which the company sek
to earn a present return. This rule, logically applied to a natur
gas company, contemplates that of the total gas reserve which h
been acquired, only a reasonable proportion, appraised at prese
market value, is to be included in the rate base as presently us
and useful, unless the entire reserve is held to have been acquire
for the benefit of the public, in which case the property must b
included in the rate base at its actual cost. What proportion o
[fol 1948] the reserve owned by a specific company may properl
be regarded as used and useful at any time must be determine
from a study of the circumstances peculiar to that company an
must reflect the best judgment of the commission based on a
the material factors. It is the settled rule, fortified by a line of cle
and convincing decisions, that the rate base on which a utilit
company is entitled to earn a reasonable return can embrace onl
property presently used and useful, and this rule applies as w
to natural gas reserves as it does to excess holdings in land, exce
building and machine capacity, outside investments, etc.

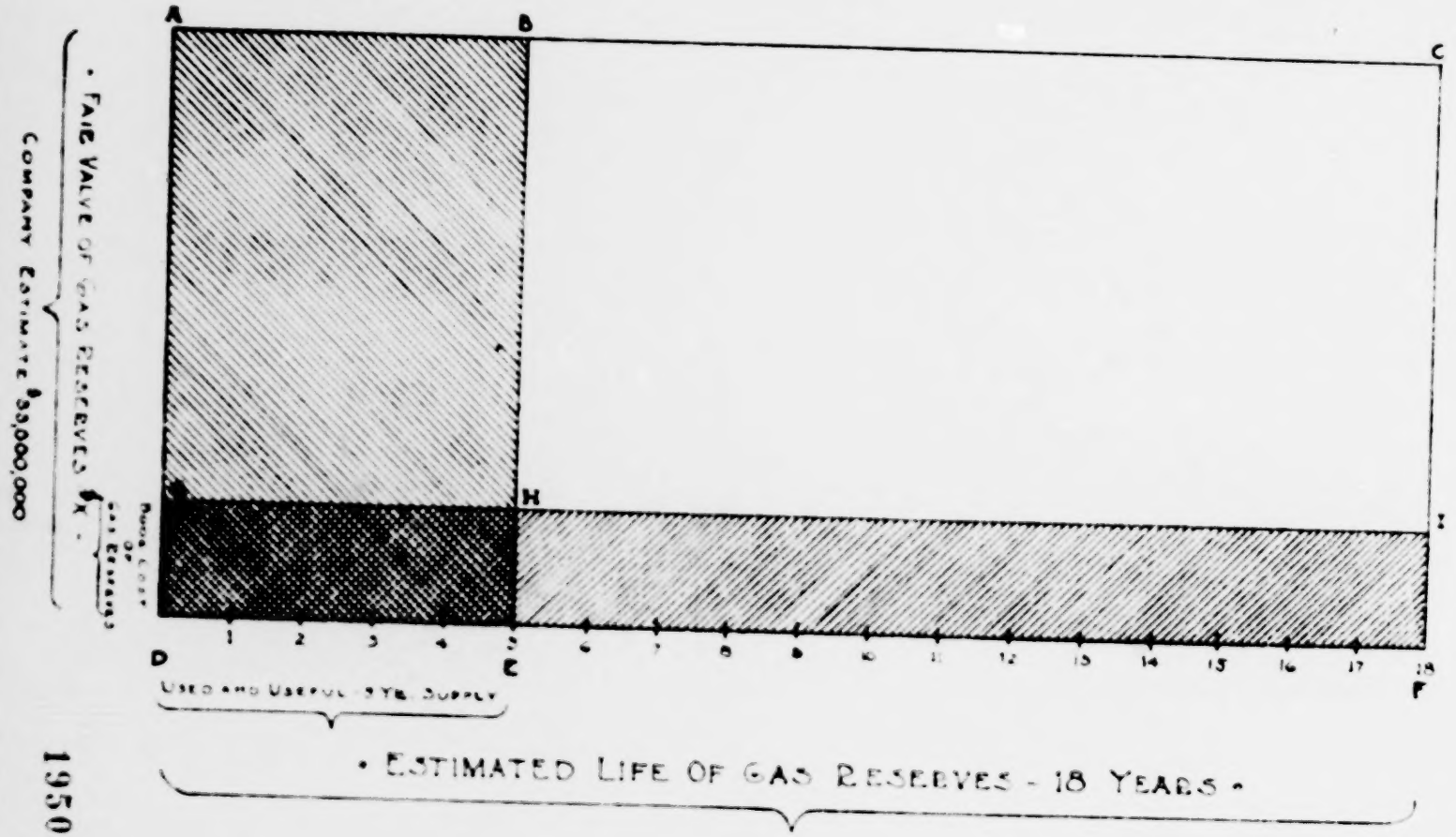
Referring to the application of the above theory to natural g
property appraisals, the Supreme Court of Pennsylvania, in th
case of Erie vs. Public Service Commission, decided January
1924, and reported in P. U. R. 1924D, page 80, held:

The Commission correctly summarized the law in these word
"Gas holdings should be included and evaluated only to the e
tent that they represent developed, used and useful territory, inclu
ing a reasonable reserve for the continued functioning of the co
pany in its public service. Such holdings should be included
the rate base at their present value."

In the case referred to the above rule as stated by the commissi
was approved by the court, and while the commission's decisi
regarding the main issue on which the appeal was taken was n
upheld, the case in question is authority for the principle th
the gas reserves of a natural gas company are to be appraised
their fair present value but not all of such appraised value
necessarily a part of the rate base. On this subject the co
further held as follows:

However, the present value of all property is not necessari
to be considered in the rate base. Generally speaking, thou
property may have the value claimed, if a reasonable proportio
of its energies or the most and useful property is not devoted
public service, it should not ask the consumer to pay a retu





ACFD - AREA REPRESENTING APPRAISED PRESENT VALUE OF GAS RESERVES - 18 YEAR SUPPLY.

GIFD - AREA REPRESENTING BOOK COST OF GAS RESERVES - 18 YEAR SUPPLY.

ABED - AREA OF PRESENT VALUE OF GAS RESERVES NOW USED AND USEFUL - 5 YEAR SUPPLY.

BCFE - AREA OF PRESENT VALUE OF GAS RESERVES HELD FOR FUTURE USE AND NOT NOW USED AND USEFUL - 13 YEAR SUPPLY.

W. [illegible]

on the excess not used in public service, allowing of course for a reasonable reserve. • • •

In ascertaining what part of the value of the gas lands not presently in service should be included in the rate base, we must consider the purpose for which the additional holdings were acquired and the physical characteristics unique to this class of lands. (Here follows discussion by court of the characteristics of a natural gas reserve.) Because of these qualities, while it may be possible to presently determine the value of the lands, in fixing the probable proportionate amount of future life of the entire tract applicable to used, useful and fair reserve, it may be, and no doubt is, im-[fol. 1949] possible to delimit it with any degree of certainty either in acreage or value. There can be no graduated values of gas lands fixed as a rate base under any theory presented to us that will consider property presently used and a descending ratio until exhaustion appears that is not the result of a pure guess. Beyond that proportion of the lands reasonably necessary to the company's life, the rate payer should not be required to assume the remainder as a burden. Though this may be difficult to determine, the Commission, acting as an administrative body in each case, must decide the question, as in all other matters subject to the right of appeal.

The character of a natural gas reserve is such that it cannot be physically divided and the [illegible] portion of the total which is used and useful must necessarily be a judgment expression. It is believed that an 18 year supply is more than is presently used and useful. The public interest will be adequately protected by a reserve sufficient to meet all reasonable requirements for 5 years in the future, and only such portion of the reserve should be included in the rate base at its fair present value. The remainder of the reserve, which has been acquired by the company in part for its own protection and in part for the use of the public, may be regarded as an investment carried by the utility for the speculative enhancement which it will reflect when it becomes a part of the used and useful property and is appraised at the then prevailing market price. There is submitted herewith a diagram showing the application in this case of the principle above described and reflecting a 5 year gas supply at its present fair value, assuming for this purpose the accuracy of the appraisal results determined by the company's engineers. The diagram follows.

(Here follows diagram marked side folio page 1950)

[fol. 1951] The above diagram illustrates in the form of a rectangle the gas reserves of the company as ascertained by its engineers, and by proper markings there is shown the relationship between the actual cost of such property as found by Mr. Jirgal and the appraised value, as well as the proportion of such property

deemed presently used and useful. The area ACFD represents the appraised value of the gas reserves, namely $33,000,000, and covers the estimated 18 year supply. The area ABED shows the present value of that portion of the gas reserves now used and useful on the basis of a 5-year supply. The area GHFD represents the book cost of the gas reserves, which Mr. Jirgal found to be $6,732,920. The area BCFE represents the present or appraised value of the gas reserves held for future use and not now used and useful. This latter proportion of the total holdings is sufficient to cover a 13 year supply.

Further explaining the application of the principle above stated, it will be noted that at the close of the first year, the 5 year block, or area ABED will be moved forward to cover what the diagram shows to be the period from numbers 1 to 6, inclusive; at the end of the second year the block will have moved forward to cover the period from numbers 2 to 7, inclusive. As the reserve is diminished through use, the proportion of the total presently used and useful is moved forward until the entire rectangle marked ACFD has been covered and paid for by the public at the appraised present value, there always being a 5 year supply included in the rate base at the appraised value until the exhaustion of the field is reached.

The inclusion in the rate base of only a reasonable portion of the entire gas reserve is made necessary by the semi-public character of a natural gas utility. A private corporation may conduct its business without public restriction and without limitation as to income. Its officials may make extensive investments of corporate resources in plant and working capital items in anticipation of a long market rise and encounter no public interference. A utility, on the other hand, cannot seek a return on property in excess of its reasonable present requirements; its earnings are subject to public regulation and its activities must conform to the established law and rules governing the regulation of such corporations. The officials of a private company need not account to the public for their actions or for profits realized from their activities. However, a party who occupies a trust relationship akin to that of an agent [fol 1952] cannot purchase with the funds of his principal property to be used in the conduct of the business with which he is entrusted and later reap a personal profit therefrom at the expense of his principal. This reasoning applies also to public utilities because of their relation to the customers they serve. A public utility cannot make a present investment of corporate funds over which intended for the future benefit of the service, and reap a profit therefrom at the expense of the public, if the rate payers have been asked to bear all the carrying charges in the meantime. Stated in another manner, if the rates for service are to cover the expense of carrying property to meet future needs, the public is not to be charged with the higher cost of acquiring such property in the future when the anticipated developments have occurred.

Applying the above reasoning to the United Fuel Gas Company, the utility is not entitled to a return on the present value of its

entire gas reserves when such reserves have been considered a part of the company's provision to meet future requirements and have been carried as such in the costs of the company. Property acquired by the officials of the company in the usual course of their duties, and for the benefit of the service which they are engaged to administer, is charged with a public interest to the extent that profits therefrom should go to relieve the subscribers, since the rates for gas have been adjusted to cover the compensation of the officials who purchased the property and also interest on the money invested. The officers of a public utility are selected because of their skill and judgment in the discharge of their duties, which duties include the acquisition of gas lands, and for such work they are paid a fair compensation. The public therefore may contend that it is entitled to the benefits resulting from the competent management by those whose compensation it provides. It has a right to expect from them that measure of skill and judgment consistent with the compensation they receive. Since the acquisition of these gas reserves has been accomplished by the officials of the utility in the performance of their duties and also with the funds of the utility, the obligation of the public to this company is met when there is included in the costs a reasonable return on the present value of that part of the reserve which is used and useful, or on the book cost of the entire reserve acquired for the public use.

It follows, therefore, that the public should be charged with the [fol 1953] cost of carrying the gas reserves according to one of two different methods, as follows:

A. Assuming that a 5-year gas supply is a reasonable measure of the reserve presently used and useful, and also assuming for this purpose the accuracy of the appraisals made by the company's engineers, there should be included in the cost of service a return on only 5/18 of the value of the gas reserves, the remaining property of this class being carried as an investment by the company at its own expense until such time as it is used and useful, when it will be included in the rate base at its then present value.

B. Adopting the same assumptions as are set forth under A above, there should be included in the cost of service a reasonable return on 5/18 of the value of the gas reserves and a return at the same rate on 13/18 of the book cost of such reserves.

In the first of the above two instances, the stockholders are given the full benefit of the appreciation which has taken place in their property to the extent that it is presently used and useful, but no provision is made for a return on speculative holdings. In the second instance, or that marked B, the owners receive, as in the first instance, a return on the appraised value of their property presently used and useful, and they are also compensated to the extent of the actual costs incurred assuming that part of the reserve not presently used and useful. Which of the two above methods should finally be adopted is a question of public policy.

HALDEMAN EXHIBIT No. 6 and 6a

United Fuel Gas Company, Inc., and Subsidiaries

Statement Distribution of Net Earnings by States Available for Depletion, Depreciation, and Return on Reproduction Cost Less Accrued Depreciation When Gas is Valued at 5 Cents per M Cubic Feet in the Ground

Particulars							
Reproduction Cost Less Accrued Depreciation (Including Overhead Charges)	Basis of apportionment	West Virginia	Kentucky	Ohio	Wholesale service	Total for natural gas service
Production System	Sales	2,189,611	612,582	278,680	5,650,272	8,720,075
Transmission System	System Demand Mileage	2,374,887	1,177,307	662,295	7,247,301	11,461,898
Distribution System	Direct	2,215,992	478,250	413,364		3,107,256
General Property	Overhead on Property	197,892	68,198	39,549	376,202	681,041
Total Physical Property		6,978,122	2,334,317	1,393,888	13,273,775	23,980,180
Working Capital	Overhead on Expenses	282,540	90,432	48,267	568,755	990,000
Going Concern Value	Overhead on Property	873,200	292,050	174,471	1,660,280	3,000,000
Total Investment		8,133,862	2,716,778	1,616,574	15,491,980	27,969,180
Gross Earnings						
Revenue from Sale of Gas	Direct	2,310,961	994,197	530,670	5,258,589	9,194,418
Miscellaneous Revenues	Overhead on Revenues	7,890	3,388	1,814	18,273	31,365
Total Gross Earnings		2,318,851	997,585	532,484	5,276,773	9,225,673
Operating Expenses and Taxes						
Gas Purchased	Sales	135,497	43,846	14,961	646,478	839,264
Production Expense	Sales	80,944	25,153	11,456	231,048	358,280

Value of Gas in Ground at 5 cents per M Cubic Feet Produced	Sales	469,187	131,211	59,752	1,208,374	1,868,524
Transmission	System Demand Mileage	124,338	61,640	34,673	370,433	691,084
Distribution	Direct	101,228	20,100	27,776		150,104
Commercial	Direct	86,315	20,458	15,487		122,260
General and Interdepartmental	Overhead on Expenses	50,334	18,900	10,136	119,436	207,806
Total Above Items		1,085,843	331,108	179,082	2,539,269	3,935,402
Taxes	Property	139,407	46,618	27,851	265,022	478,898
Profit and Loss Adjustments	Overhead on Expenses	4,635	1,483	792	9,331	16,241
Total Expenses and Ordinary Taxes		1,229,885	379,209	207,725	2,813,722	4,430,541
50% Gasoline Net Revenue	Sales	254,630*	65,615*	20,880*	694,278*	934,394*
Net Operating Expenses		975,259	313,594	177,845	2,069,449	3,496,147
Gross Income		1,323,572	683,991	354,639	3,307,224	5,729,526
Income Taxes—Estimated	Taxable Income	37,836	17,419	9,883	247,208	312,346
Net Earnings Available for Depletion, Depreciation, and Return		1,285,736	666,572	344,756	3,120,116	5,417,180
Per Cent. of Reproduction Cost Less Accrued Depreciation		15.21*	24.45*	21.39*	20.14*	19.38*

[* Red in copy.]

1931

HAGENAH EXHIBIT NO. 7 AND 7A

United Fuel Gas Company, Inc., and Subsidiaries

Statement Showing Amount and per cent of Return Earned on Cost of Reproduction Less Depreciation When Gas is Valued at 5 Cents per M Cubic Feet in the Ground

Particulars West Virginia	Cost of reproduction less depreciation at Dec. 31, 1935	Net earnings available for depreciation and return	Depreciation 5.5% of book cost of property	Net earnings available for return	Per cent on cost of reproduction less depreciation
City of Charleston	3,396,534	651,356	132,957*	518,399	15.26
City of Huntington	2,556,555	275,830	101,034*	174,796	6.84
City of Williamson	349,858	44,434	13,822*	30,612	8.75
Other West Virginia Towns	1,831,021	314,116	71,525*	242,591	13.25
Total West Virginia	8,133,968	1,285,736	319,338*	966,398	11.88
Kentucky	2,716,778	666,572	106,786*	559,786	20.60
Ohio	1,616,374	344,756	63,799*	280,957	17.38
Wholesale Service	15,491,860	3,120,116	607,084*	2,513,032	16.22
Total Gas Department	27,959,180	5,417,180	1,097,007*	4,320,173	15.45

(Here follows Hagenah Exhibit No. 8, marked sole folio page 1956)

[fol. 1956]

Statistics of

	Crude petroleum production	
	Millions of barrels	Index, 1913=100
1913 Monthly Average	20.7	100
1914 " "	22.1	109
1915 " "	23.4	115
1916 " "	25.0	123
1917 " "	27.9	137
1918 " "	29.6	145
1919 " "	31.4	154
1920 " "	36.9	181
1921 " "	39.1	189
1922 " "	46.4	224
1923 " "	61.0	295
1923		
January	52.5	254
February	48.5	235
March	56.9	275
April	59.0	285
May	62.3	301
June	62.8	304
July	65.9	318
August	66.4	321
September	65.3	315
October	67.5	326
November	65.3	316
December	59.5	288
1924		
January	56.4	273
February	55.4	268
March	59.7	288
April	59.4	287
May	61.6	298
June	59.2	286
July	61.0	295
August	61.7	298
September	59.6	288
October	59.8	289
November	56.3	273

Hagenah Exhibit No. 8

f Crude Petroleum and Gasoline Production, Consumption, and Stock

Crude petroleum consumption		Gasoline production		Dom gasoline co
Millions of barrels	Index, 1913=100	Millions of gallons	Index, 1919=100	Millions of gallons
21 8	100	...	...	...
21 7	100	...	...	...
22 7	104	...	...	...
26 5	122	...	...	...
31 4	144	257	72	218
34 4	158	297	89	260
34 8	160	329	100	286
43 7	201	406	123	354
43 7	201	429	130	376
49 3	226	516	157	447
59 5	273	629	191	557
54 2	249	623	189	456
51 4	236	568	172	380
59 6	274	639	191	446
58 7	269	619	188	485
57 8	265	631	192	582
55 1	253	636	193	633
62 0	285	636	193	674
64 6	296	648	197	692
62 2	285	623	189	655
63 6	292	659	200	621
60 8	279	617	187	548
63 8	293	659	200	518
62 2	286	695	211	500
59 1	271	677	205	396
63 1	290	743	225	467
61 7	283	754	229	607
62 4	286	779	236	672
59 9	275	737	223	686
61 1	280	741	225	789
61 0	280	755	229	819
62 4	287	750	227	718
64 2	296	769	231	751
64 2	296	762	232	695

stic sumption	Gasoline stocks at end of month		Number of days' stocks of crude oil on hand	
Index, 1919—100	Millions of gallons	Index, 1919—100	Actual days	Index, 1919—100
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
76	343	73	159	137
94	386	82	126	109
100	472	100	116	100
124	464	98	92	79
131	630	134	111	96
156	785	167	153	132
195	1,126	238	147	127
160	1,002	212	146	126
133	1,130	239	140	121
156	1,259	267	135	116
170	1,336	283	135	116
204	1,328	281	146	126
221	1,263	267	151	130
235	1,165	247	146	126
242	1,053	223	144	124
229	972	206	148	128
217	946	200	155	134
188	985	209	160	138
181	1,074	228	157	135
175	1,200	254	162	140
138	1,383	293	160	138
163	1,587	336	162	140
212	1,625	344	162	140
245	1,649	349	167	144
240	1,598	338	171	147
276	1,470	311	177	153
286	1,311	278	180	155
251	1,229	260	170	147
263	1,152	244	170	147
243	1,133	239	164	141

[fol. 1857] HAGENAH EXHIBIT No. 9

United Fuel Gas Company

Statement Showing Apportionment of Investment and Expenses Between Gas and Gasoline Departments and per Cent Available for Depletion, Depreciation, and Return in Case of Gas Department

Year Ended December 31, 1923

1. Statement Showing Distribution of Present Value Between Gas and Gasoline Property

Joint Gas and Gasoline Property	
Production System (100%)	$14,122,814
Transmission System (45%)	4,371,028
General Property (66⅔%)	384,000
Total above Items	$18,877,842
Overhead on above at 18%	2,186,086
Total Joint Gas and Gasoline Property	$21,063,928
Deduct—Gasoline Proportion of Joint Property (24.62%)	5,185,939
Balance—Gas Proportion of Joint Property	$15,877,989
Add	
Balance of Transmission System (55%)	5,342,369
Distribution System (100%)	2,633,268
Balance of General Property	192,305
Balance of Overheads	1,470,230
Total Physical Property—Gas Department	$25,516,161
Working Capital	990,000
Going Concern Value	3,000,000
Total Present Value—Gas Department	$29,506,161
Gasoline Proportion of Joint Property as above	5,185,939
Total Present Value—All Property	$34,692,100

II Statement Showing Distribution of Joint Expenses Between Gas and Gasoline Departments

Joint Gas and Gasoline Expenses	
Production Expenses (100%)	$1,139,634
Gas Purchased (100%)	619,264
Transmission Expense (45%)	270,038
Total Direct Items	$2,028,936
Add—Proportion of General Expenses (71.2%)	148,022
Total Joint Gas and Gasoline Expenses	2,176,958
Gasoline Proportion of Joint Expenses above (24.62%)	535,967
Joint Property Taxes Assignable to Gasoline Department	71,595
Total Expenses Assignable to Gasoline Department	$607,562

III Statement Showing Return on Value on Above Basis

Present Value Assigned to Gas Department as above	$29,506,161
Net Earnings before Depletion and Depreciation per Jirgal Exhibit No. 1	$6,504,270
Deduct—50% of Gasoline Net Earnings	934,394
Net Earnings before Considering Gasoline	5,569,876
Add Back—Gasoline Proportion of Joint Expenses as above	607,562
Net Earnings after Adjustment for Gasoline—Available for Depletion, Depreciation and Return	$6,177,438
Per Cent on Present Value as above	20.94

HAGENAH EXHIBIT No. 19

United Fuel Gas Company, Inc., and Subsidiaries

Statement Showing Per Cent Earned on Various Valuation Bases for the Year Ended December 31, 1923

Particulars	Present value of property including book cost of leaseholds	Present value, including 5/18 of appraisal value of leaseholds	Book value basis	Present value, excluding leaseholds and assuming gas value in ground of 5 cents per M cubic feet	Present value, after assigning proportion of joint property to gasoline
Valuation Assigned	$34,692,109	$37,125,845	$30,278,912	$27,959,180	$29,506,161
Net Earnings before Depletion and Depreciation	6,504,270	6,504,270	6,504,270	5,417,180	6,177,438
Per Cent on Valuation*	18.75*	17.52*	21.48*	19.38*	20.94*
Provision for Depletion and Depreciation	1,399,227	1,399,227	1,399,227	1,097,007	.....
Net Earnings after Depletion and Depreciation	$5,105,043	5,105,043	5,105,043	4,320,173	.....
Per Cent on Valuation*	14.72*	13.75*	16.86*	15.45*	.....

1* Red in copy.)

1929

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE

SOUTHERN DISTRICT OF WEST VIRGINIA.

No. 1517) In Equity

UNITED FUEL GAS COMPANY, a Corporation, *Plaintiff*,

versus

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS and JAMES J. DIVINE, constituting the said The Public Service Commission of West Virginia, HOWARD B. LEE, Attorney General of the State of West Virginia, and FRED M. LIVEZEY, Counsel for said The Public Service Commission of West Virginia, *Defendants*.

BEFORE ROSE, CIRCUIT JUDGE AND McDOWELL AND McCLINTIC, DISTRICT JUDGES.

Harold A. Ritz for the Plaintiff, Howard B. Lee, Attorney General and Fred M. Livezey, Counsel for The Public Service Commission of West Virginia, for the original defendants; H. D. Rummel, Robert S. Spilman and Paul M. Scott, (Donald O. Blagg, C. M. Strickling, George S. Wallace and Harry Scherr on the Brief for the Intervening defendants).

Submitted May 18, 1925. Decided .....

Rose, Circuit Judge:

On the 2nd day of April, 1925, the United Fuel Gas Company filed in the United States District Court for the Southern District of West Virginia at Charleston, its bill in equity. The defendants named in it are The Public Service Commission of West Virginia; Birk S. Stathers, Ernest D. Lewis and James J. Divine, (the members of the Commission); Howard B. Lee, the Attorney General of the State; and Fred M. Livezey, Counsel to the Commission.

On the 17th day of April, 1925, sundry municipal and private corporations obtained leave to intervene. Both the original and the intervening defendants have answered. The latter will be called the protestants.

The bill states certain facts which are not in dispute, the more important of which are that for a considerable time, the plaintiff has been engaged, among other things, in producing and selling natural gas in West Virginia and elsewhere. Some of the plaintiff's gas business is with domestic and industrial consumers in that State, and some is with wholesale purchasers. Certainly since 1916 (case 482; 1 Decision Public Service Commission of West Virginia 238) and perhaps since 1913, United Fuel Gas Co. vs. Public Service Commission, 73 W. Va. 571, the rates charged by the plaintiff to consumers in West Virginia have been regulated by the Public Service Commission. With some relatively unimportant exceptions those now prevailing, have been in force since 1919. The plaintiff claiming that they did not give a reasonable return upon the value of its property devoted to West Virginia public service, on April 26th, 1924, filed a new and higher schedule, the going into effect of which was at once suspended by the Commission. After a full hearing and the taking of much testimony, the Commission on March 24th, 1925, by a vote of two to one, held

that the old rates yielded an adequate return and refused to let the plaintiff exact the new. P. S. C. W. Va. Bulletin 91. The plaintiff charges that the rates thus continued in force are confiscatory. It asserts that the defendants, the Attorney General of the State and the counsel for the Commission are charged with the duty of enforcing certain statutes which subject to fine and imprisonment any public service corporation and any of its officers or agents who disobey the orders of the Commission. It says that as a consequence, its property is being taken from it without due process of law. Injunctive relief is prayed.

Judge McClintic refused a temporary restraining order. Answers were filed which denied that the rates prescribed by the Commission will not yield a fair return on the plaintiff's property used in the public service. The application for an injunction *pendente lite* was heard by the Court as now constituted.

THE PLAINTIFF AND THE COMMISSION.

Up to date, this is the latest scene in a practically continuous performance, which began on May 21, 1917, more than eight years ago, with a petition of the plaintiff, numbered on the Commission's docket #585, for permission to increase its rates to domestic and industrial consumers. On February 28th, following, the Commission by a report and order (Bulletin 43) granted some of the relief asked for and refused the rest. In less than ten months, the plaintiff presented a new application docketed #845. It asked to be allowed to make another raise to domestic consumers and to discontinue all service to industrial. This proceeding was pending for a year when on December 19, 1919, the Commission filed a report and order (Bulletinn 51) by which some, but

not all of the advance sought was allowed but permission to cut off gas to industrial consumers was denied. After an interval of eighteen months, the plaintiff was back with a petition, #1251, which the Commission accurately described as in practical effect an application for a rehearing of the two earlier cases, #585 and #845, respectively. On April 28, 1922, the Commission by a report and order (Bulletin 70), made some additional allowance to the plaintiff in the matter of rates and suspended further action to await the result of six months' operation under a prescribed system of accounting. On the 20th of February, 1923, the information which the Commission had sought being then before it, the plaintiff asked that the case be further heard. Such request was granted with the result that on August 9, 1923, (Bulletin 82), the Commission allowed a considerable temporary increase and retained the proceedings to await the result of six months' operation, to end March, 1924. From this order the present protestants appealed, as the State law permitted, to the Supreme Court of Appeals, which on November 27, 1923, 95 W. Va. 91, reversed and set aside the findings and order of the Commission and remanded the case for "such further investigation and order as may be proper."

Nothing further was done until April 26, 1924, when the plaintiff filed a new and higher schedule of rates. Upon the plaintiff's motion the nominally new proceeding, #1516, was consolidated with #1251 which was still open and which, as has been stated, was in itself, really an application for a rehearing of the earlier cases #585 and #845. It was in this consolidated proceeding that the Commission refused permission to make the desired increase, and thereby according to the plaintiff confiscated part of its property without due process of law.

THE CASE IN THIS COURT.

By stipulation, the testimony and exhibits submitted to the Commission were treated as before us and some additional testimony was put in.

In the course of this long drawn out controversy, many contentions have been made. Some of them are at once novel and difficult. Questions are raised, authoritative answers to which will affect public and private interests of far greater magnitude than those directly before us, considerable as the latter are. The law of public rate regulation is still in the making. Courts will do well to move cautiously and to speak sparingly. While stating all the facts which to either lawyer or layman can seem relevant, they should attempt to decide nothing not required for the full, fair and just determination of the actual cases before them. Upon the record before us, it will be easier for us to keep ourselves within such limits if we depart somewhat from the usual order of discussion in rate cases and deal with other questions before attempting to appraise the value of the plaintiff's property, used and useful in the public service.

DEPRECIATION AND AMORTIZATION.

The plaintiff employs in its business, a plant which, like that of every one else, is subject to the wear and tear of use and misadventure. In order to keep itself in condition to render efficient service and to protect itself against the gradual decay of its investment, it must annually expend or lay aside a sum sufficient to offset deterioration. The plaintiff, moreover, is faced with a problem with which most public utilities are not concerned. It does not make the gas it sells. That has existed for milleniums and plaintiff now owns much of it or at all events, has rights to or in it. When it is used, it

is gone forever. A portion of plaintiff's annual receipts, therefore represents the proceeds of the sale of its property. Moreover, when the plaintiff's gas supply shall become so far exhausted that it can no longer be profitably transported and sold, a large part of the value of its physical plant will vanish, for in the location in which it now is, and for the uses to which it is now put, much of it will be worthless no matter in how good a state of physical preservation it may then be. It is possible that some of it may be put to profitable use where it is. Other portions may have an appreciable salvage value, but a good deal of it will inevitably prove a total loss. In short, in addition to setting aside something every year to make good ordinary depreciation, the plaintiff must make arrangements adequate for the amortization of a considerable part of its investment.

Some of its expert witnesses have attempted further differentiations between the various kinds of depreciation or consumption. These may be useful from a bookkeeping standpoint, but we agree with the Commission that for the purposes now in hand, such refinements are unnecessary. The plaintiff is entitled to set aside annually such sum as will be needed to keep its physical plant as good as new in so far as that is possible, or if possible, desirable, and in addition, such sum as will at the end of the estimated length of the profitable life of its plant, make good its value. This allowance for amortization will in itself render unnecessary quite so liberal a provision for depreciation as might otherwise be called for. If the plant could look forward to a life of indefinite duration, the depreciation allowance should be large enough not only to make the repairs and replacements which would be practicable and useful, but also to offset the deterioration in value incident to lapse of time and which does not necessarily result in any im-

mediate impairment of efficiency of operation and may not be discernable by inspection, but which has, nevertheless, certainly taken place. When, however, provision is made for the amortization of the plant as a whole at the end of a definite and not very long period, the allowance for depreciation may properly be confined to the sums necessary to keep it in the meanwhile, up to a high state of industrial efficiency.

DEPRECIATION.

What sum should the plaintiff annually set aside for depreciation? In the fourteen and a half years beginning July 1, 1909, and ending December 31, 1923, it actually expended for that purpose an average of $203,463.61 per annum. In the first six and a half years of that period, its annual outlay on that account was a trifle over $140,000; in the last eight, not quite $255,000. It has spent in that way all that it usefully could. Its expert witnesses say that its plant is now in such condition that for operating purposes it is practically 100% efficient. The Commission is willing to allow it for the future $404,333 per annum. As the record now stands, we are not justified in holding that more is required.

AMORTIZATION.

The Commission allows for amortization, a sum equivalent to 4.15% of the fair value of plaintiff's property. This is clearly more than sufficient. It does not take quite $3.90 paid in at the end of each of eighteen years, compounded annually at 4% to amount to $100.00 at the time the last payment is made. The plaintiff's expert witnesses say that the probabilities are that it has considerably more than eighteen years of profitable business life ahead of it. Even when the exhaustion of its gas holdings shall bring its activities to an end, not all of

its property will be worthless. There will be an appreciable portion of it wich, without expensive reconstruction, may be put to other uses and there will be some salvage in a considerable part of the remainder. The income set apart for amortization will come into plaintiff's hands with more or less regularity through the whole of each twelve month period and in large part, will be available before the end of the year. It is highly probable the plaintiff can so use the funds of its amortization reserve so as to get more than 4% per annum for them. Savings banks will pay it as much.

Taking everything into consideration, we are convinced that 3.65% per annum will be a generous allowance for amortization.

RATE OF RETURN

The Commission has fixed 8% as the rate of return to which the plaintiff is entitled. In view of the ample provision for the amortization of plaintiff's property at the end of eighteen years, this is certainly liberal.

The year 1925 was a comparatively good year for the railroads and yet the net return upon the book value of their property was less than 5% and such values are doubtless far below the present reproduction costs. It is true that the natural gas business is in its nature far more speculative than that of the railroads, but the allowance for amortization minimizes, if it does not altogether offset its greater hazards.

It follows therefore, that the plaintiff will have no reason to complain that it is not receiving a fair return on its property if, after deducting from its net earnings $404,333 per annum for depreciation, the balance left shall be sufficient to pay 11.65% upon the fair value of its property used and useful in the public service, that is 8% in addition to 3.65% for amortization.

EARNINGS.

Upon the face of plaintiff's books as they were kept, its net income from the gas portion of its business for the year 1923, was, after deducting operating expenses and taxes $3,995,802.82

The Commission finds that to this sum should be added as the result of certain bookkeeping adjustments the sum of..... 187,533.93

We do not understand that this finding is attacked. In any event, we are satisfied it is justified.

PROFITS FROM GASOLINE EXTRACTION.

It pays the plaintiff before delivering its gas to its customers, to take out the gasoline which is in it when it comes from the wells. Some years ago the plaintiff organized another corporation to do the actual work of extracting the gasoline and afterwards turned over the stock of this new company to its own stockholders of whom there are but two, both corporations. It made a contract with its gasoline extracting subsidiary or went through the form of making a contract with it, as you please, by which it was to receive one-eighth of the gross profits of the extracting. The Public Service Commission of West Virginia has repeatedly held that in determining whether the plaintiff's stockholders are receiving a fair return on their property, it may, so far as concerns the matter in hand, inquire what the gasoline arrangement really profits them. The Commission has determined that what comes to them is more accurately measured by a sum equivalent to one-half of the subsidiary's earnings than it is by the one-eighth of the gross profits. This conclusion was expressly sustained by the Supreme Court of Appeals of West Virginia in the case of City of Charleston vs. Public Service Commission of West Virginia, et al, 95 W. Va. 91, and in

which the parties were identical with those now before this Court. We do not find it necessary to consider whether the issue there passed upon is now *res adjudicata* because even if it is not, we are as to it of one mind with the highest Court of the State. For the year 1923, one-half of the net earnings from gasoline extraction amounted to $934,393.41.

SALES OF GAS TO STOCKHOLDERS.

This, however, does not represent all the plaintiff earned for its owners. The plaintiff's two stockholders took from it, large quantities of gas amounting in the year 1923 to more than one-third of all sold by it. The price to one of these stockholders was 7¢ per M. C. F. and to the other 7½¢. For the two, it averaged 7.279¢. The plaintiff admits that this gas was worth much more. In determining what return plaintiff made to those interested in it, we do not understand that it questions that there should be added to its earnings as they appear upon its books, the difference between the price paid to its stockholders and what it could have gotten from others for the gas they took.

VALUE UPON WHICH RETURN WAS EARNED.

Assuming for the moment that the finding of the Commission in this respect is accurate, the net revenues of the plaintiff for the year 1923 were as follows:

On the face of its books	$3,995,802.82
Add Adjustments	187,533.93
Profits of gasoline extraction	934,393.41
Return to its stockholders from gas sold them below cost	2,143,661.46
Total	7,261,391.62

If from this be deducted
Depreciation Allowance of 404,333

There remains $6,857,058.62
which is 11.65% on $58,858,872.27.

The Plaintiff says that the Commission, in its calculation, did not take into account the fact that if it had received the extra $2,143,661.46 from its stockholders, it would have had to pay federal income tax thereon, and that, therefore, its gains would not have been measured by the full amount, but only by the difference between it and the extra income tax which would in that event have been levied upon it. The record as presented to us, does not make it clear whether the Commission did or did not make any allowance for this income tax complication. In any event, the protestants have figured the gains for the plaintiff's stockholders on a basis much more favorable to it, and have incidentally taken fully into account the increased income tax the plaintiff would have had to lay out had its stockholders paid in cash for the real value of the gas they received. They calculate $1,495,497 to be the minimum net addition which should be made on account of the gas so furnished, which gives an income sufficient to pay 11.65% on $53,295,228.84, a sum more than two and a half times as much as plaintiff's investment including therein all the money it has borrowed and still owes.

VALUE OF PLAINTIFF'S PROPERTY.

What is the present worth of plaintiff's property used and useful in the public service?

ITS INVESTMENT.

In this connection, it will be well to inquire what is the amount of the plaintiff's investment. As already stated, the amount its stockholders have paid into it, is not more than ..... $ 6,000,000.00

On December 31, 1923, it owed an aggregate of 12,060,343.34

It follows that all the money which ever went into it did not exceed $18,060,343.34

COST.

It is true, however, that the cost of the property it now has is greater than the total of its investment.

For convenient discussion of the questions most sharply controverted, it will be expedient to divide what the plaintiff possesses into three classes, namely, (first) its tangible property, comprising lands, buildings, pipe lines, machinery, tools, working capital and a hundred other more or less similar things, (second) its going concern value and (third) its other intangible possessions, consisting of interests or rights in gas still in the ground. For the first class, that is, its tangible possessions, it had paid up to December 31, 1923 ..... $19,945,582.16

As we shall later see, there is a dispute as to what its intangible holdings actually cost but the Commission found that they stood on its books at 6,343,329.67

and for the present purpose they may be so taken although some of the accountants put the figure somewhat higher.

That is to say, the aggregate cost of the plaintiff's present property of all kinds was not greater than $26,288,911.83

This aggregate exceeds by $8,228,568.49 all the outside money that by any possibility ever went into the prop-

1941

erty. Where did it come from? A small part has been supplied by money laid aside for depreciation but not yet actually expended for that purpose. The greater part of it, however, represents the sums reserved out of earnings for the purpose of amortizing the plant when its period of useful life shall come to an end.

It will now be desirable to examine with care plaintiff's claim that both classes of its properties are now worth much more than it invested in them or that they in any sense cost it.

TANGIBLE PROPERTY.

As already stated, it spent for its tangible property $19,945,582.16. These expenditures were made at different times and consequently in dollars having varying purchasing power. Translating all of them into the currency of 1923 and using for that purpose the index figures of the Department of Labor, we find that expressing them in dollars of that year, the cost was $24,546,309. The plaintiff's experts estimate that the reproduction costs of these properties would be $37,054,425.00, which exceeds the book cost by $17,108,842.84, or by almost 86%. As we have seen a part of this excess, that is the portion represented by the difference

between	$24,546,309.00 and
	19,945,582.16
or	$ 4,600,726.84

is due to the decrease in the purchasing power of the dollar but the estimated reproduction cost new, exceeds the actual cost in dollars of 1923 as they are arrived at by using the index figures named, by the difference between

between	$37,054,425
and	24,546,309
that is	$12,508,116 or 50%

Labor and such materials as went into plaintiff's construction work may, and doubtless have, increased in cost at a higher rate than have the average of all commodities, the latter including food stuffs and agricultural products generally. The witnesses agree that this is so, but so far as we can recall, no attempt has been made to work out with precision the effect of these factors. We are satisfied that upon the most liberal estimate, they can not account for more than one-third of the $12,508,116, the difference between what would have been the cost of the plaintiff's property expressed in dollars of 1923 as determined by the use of the index figures of the Department of Labor and what its expert witnesses say would now take to reproduce it. Where does the other $8,000,000 or more come from?

OVERHEADS

We are persuaded that it is almost altogether due to the liberality with which the witnesses estimate the outlay which in reproduction would be made for direct and for general overheads. The latter alone are figured at $7,963,311. There is no possible question that in almost all of these rates cases the overhead charges included in the estimated cost of reproduction greatly exceed any sum that the utility actually paid out for such purposes. A large and widely distributed plant is ordinarily a growth extending over many years. Its property is managed by its officers and its construction is financed in installments. The large overheads estimated by the experts are simply not incurred. The plaintiff's expert based his calculation concerning them largely upon the experience he had in the erection of other plants, especially one in Alberta, Canada. He apparently ignored the history of the construction of the plaintiff's, about which he was testifying for it is certain that no such expenditures for overheads were in fact found necessary by it. The

writer of this opinion had on another occasion, to give some consideration to the great discrepancy there almost always is between what the experts, in making up a reproduction cost, estimate must be expended for overheads and the sums the particular utility actually laid out for such purposes. Chesapeake & Potomac Telephone Co. of Baltimore City vs. Whitman, 3 F. (2d) 938, 947, *et seq.*

A well managed public utility almost always builds up an organization which as part of its every day work and without appreciable additional cost, can and does superintend the making of such additions and extensions as from time to time may be required. The possession of such a staff is not the least important asset going to make up what is called going concern value. Perhaps one of the reasons why reproduction cost, although one of the weightiest elements in the determination of present fair value, is not necessarily controlling, is the very fact that in arriving at it, the experts always include an expenditure for overheads far in excess of any which the utility ever incurs.

The plaintiff is here because it is dissatisfied with the ultimate conclusion to which the majority of the Commission came as well as with some of the findings of law and fact by which that decision was supported. The justice of its criticism is the issue upon which we must pass. Whatever we or others may think upon that point, we believe there can be no question that all the Commission united to give a very sympathetic ear to many of plaintiff's contentions. For illustration, they substantially accepted Mr. Uebelacher's estimate that the cost of reproducing new the tangible property of the plaintiff would be $37,054,425

although the expert witness for the protestants had said that it could be done for ... 1,663,273

less money; that is for $35,391,152

The only deduction the Commission made from Mr. Uebelacher's total was an item of $254,332. The plaintiff had expended that amount in sinking dry or worthless wells. It might have reasonably claimed that such an outlay was a part of its prudent investment but the Commission could not see the way clear to hold that such expenditure could be fairly included in the reproduction cost of the property used and useful in the public service. Deducting from Mr. Uebelacher's total of $37,054,425
this 254,332

the Commission found that the cost of reproducing new the plaintiff's tangible property used and useful in the natural gas portion of its business to be $36,800,093

Very possibly, it would cost something in that neighborhood to duplicate in one continuous operation all the plaintiff's present plant. It is true that there is no occasion for any such duplication. Plants of the size and more or less scattered character of that of the plaintiff are seldom or never constructed in the manner assumed by the reproduction theory. Nevertheless, because there is usually no other way of arriving even approximately at the fair market value of the utility's property, Commissions and Courts are forced to give great weight to what the evidence shows the cost of reproduction would be. In so doing, however, it is only fair to bear in mind how seldom a purchaser of such a utility, no matter how free a market for it there might be, would feel justified in paying for it as much as it would cost to reproduce all of its property even after making proper allowance for any physical depreciation it had undergone.

No wise man would incorporate in a newly constructed plant duplicates of not a little which in the old still

served its turn well enough. The money could be used to far better advantage.

DEPRECIATION OF PLAINTIFF'S TANGIBLE PROPERTY.

The Plaintiff's plant was not new and all agree that it is worth less than if it was, although there is the usual difference as to the extent of its depreciation. The plaintiff, through its witness Mr. Uebelacher, fixes $8,433,105 as the amount which on that score should be deducted from the reproduction cost new. We have not been able to make certain whether any part of the $254,332 of his estimate of the cost of sinking dry wells, disallowed by the Commission, is included in his allowance for depreciation, although it is quite possible that somewhere in the wilderness of tables and exhibits the question is answered. Fortunately, the item is not so large as to make certainty as to it essential.

The protestant's expert, Mr. Hagenah, calculates the depreciation at $11,421,972. The principal and indeed the only substantial difference between him and Mr. Uebelacher, is that the latter took into account nothing other than the observed physical depreciation while he held that when the normal life of any item of the plant will probably or certainly be cut short by the depletion of the supply of gas, it should be treated as now proportionately less valuable because no matter in how good physical condition it is, it has already run out a part of its definitely limited span of life. There cannot be room for much difference of opinion that a pipe line which will lose all its value at the end of say eighteen years, because there will no longer be any use for it where it is and because it will cost more to dig it up than it will be worth when brought to the surface, is not in any reasonable sense of the term, worth as much as would be one

out of which forty years of useful service can be expected. From the standpoint under consideration, it would make little or no difference whether the pipes had been newly laid or had been in the ground for years. In either case, they would be efficient for eighteen years and after that, they would both be equally valueless. Logically, Mr. Hagenah would seem to have followed the right method of ascertaining the present fair value of the property. On the other hand, Mr. Uebelacher would be correct if what the plaintiff is entitled to earn is to be figured with the primary purpose of preserving to it the money it has prudently invested in the public service. Nevertheless, the Commission rejected Mr. Hagenah's and accepted Mr. Uebelacher's figures for depreciation. It follows that if from the $36,800,093

which they found to be the cost of reproducing new all of plaintiff's tangible property, they deducted its observed physical deterioration 8,433,165

there remains a balance of $28,366,928

That would doubtless have been the valuation which the Commission or the majority of it would have put upon the plaintiff's tangible property had they had before them evidence of nothing other than the cost of reproduction new and the observed physical depreciation. There was, however, much other testimony, as for example, as to investment, cost and many other more or less relevant matters to which they felt in duty bound to give consideration. Having done so, one of them concluded that on December 31, 1923, the fair present value of the plaintiff's tangible property was $25,000,000. The other agreed with him in denying any increase of rates and valued the same property at the same time, at $26,000,000. The

third, or dissenting member, did not make any specific finding on this point.

Taking into account all the various matters considered by the Commission and the others which have been set forth in this opinion, and trying to give to each and every one of them its due weight, we are persuaded that the fair value on December 31, 1923, of plaintiff's physical property did not exceed $26,000,000.

GOING CONCERN AND WORKING CAPITAL.

In addition, the Commission allowed the plaintiff $3,000,000 for going concern value and found it used as working capital $990,000. There seems to be little challenge of the former figure and none at all of the latter. If there be added to the $26,000,000, the maximum value on December 31, 1923, of plaintiff's tangible property, the total will be $29,990,000.

It should be noted that according to the plaintiff's books, of its total investment not exceeding $18,060,343.34 not less than ..... 6,343,329.67 went into gas leases so that all that was employed in the purchase or construction of its physical properties and in supplying its working capital was 11,717,013.67

The value of pipe lines, compression pumps, buildings, tools, etc., as expressed in dollars, has become greater as the purchase power of the dollar itself has declined, but as a rule, there has been little, if any, other reason why they should have become far more valuable now than they once were. The supply of such things is not limited. They can be bought and duplicated in indefinite quantities. They are not affected by such causes as those which we shall see plaintiff says have made its gas reserves enormously more valuable.

The facts and conditions being as they are, a valuation

of even as much as $26,990,000 for the physical property and working capital of the plaintiff is explainable only upon the assumption that it has put in to that property many millions out of its earnings. There is, of course, no question that it has done this to a very considerable extent, but even so, the valuation which we have put upon its physical property, its working capital and its going concern value, would seem to err if at all on the side of liberality.

PLAINTIFF'S GAS RESERVES.

In a sense, at least, the plaintiff owns, or at all events, is in a position to own if it will, the gas and oil under 814,910.68 acres of land. It is seized in fee of them under 41,969.47 and holds the balance upon what are called leases. The number of these separate documents run into the hundreds or thousands. They have been made at different times, with different men and under all sorts of varying conditions so that their provisions are by no means uniform. Speaking broadly, however, they are for the most part alike in their general nature. By their terms, the plaintiff obtains from the previous owner of the gas and oil, the exclusive right for a number of years to search for those commodities, and to take them if they are found. As a rule, the plaintiff pays the so-called lessor a cash sum at the time the lease is made. Usually the amount is relatively small but sometimes it is substantial. So long as the plaintiff merely holds the lease, that is, retains the option to search for gas or oil without actually doing so, it pays a modest annual rent. Usually, it may surrender this option at its pleasure and thereby put an end to its obligation to pay rent for the future. On the other hand, if at any time during the lease, gas or oil is obtained in a merchantable amount, the term of the lease is automatically extended for so long as it

shall continue to flow in such quantities. So soon as the plaintiff begins to take either from the premises, it becomes under obligations to pay a fixed or percentage royalty, the amount of which is much greater than the rent payable during the period of the unexercised option.

In 1909 the plaintiff, at a valuation of $7,233,538.96, took over from its predecessors existing gas leases. The protestants' very able accountant made an analysis of all the available data as to the actual cost of them to plaintiff's assignors and as a result, came to the conclusion that it did not amount to as much as $2,000,000. There is no question that the plaintiff since 1909 has charged the $7,126,454.33 it expended for rentals and royalties to operating expenses. On the other hand, it carried to property account the $1,098,673.02 it paid as bonuses for new leases or for renewals of old, but it has not deducted from that account the $1,535,917.85 which represented or was supposed to represent the cost to it of leases which it had abandoned. Such a method of keeping its books may show what its prudent investment has been but tends to obscure rather than to throw light upon the actual present value of its property used and useful in the public service. It is sufficient for the present at least, to note the fact for it does not matter very much whether this $1,535,917.85 shall or shall not be taken into account in determining the present fair value of the plaintiff's property. Even if it should not be deducted, the total cost to the plaintiff of its gas rights does not amount to more than $9,000,000. If to that sum be added the $29,990,000 which we have already found to be the present fair value of all the rest of its property, used and useful in the public service, the total will still be under $39,000,000. As has already been shown, the plaintiff is earning a fair return upon something over $53,000,000. Its right to an increase in rates depends not upon the

cost of its properties no matter how that be figured, nor from that standpoint is it very important what sum one may find to be the present fair value of any of them other than its gas holdings. It may be allowed all that it can possibly claim on either of these scores and it will still fail to make out a case unless it shows first, its gas reserves are now worth many times what it paid for them and second that all, or a large part of them, should be treated as property used and useful in the public service.

PLAINTIFF'S REAPPRAISAL OF ITS GAS RESERVES.

It is of little moment that upon plaintiff's books its rights in gas have been valued at nearly $40,000,000 for four-fifths of this impressive total, or to be exact, $31,778,111.42 of it, represents merely the plaintiff's hope, belief or conviction, as the fact may be, that its gas properties are now worth more than five times the utmost it ever paid for them. On the 21st of December, 1918, it made an application to the Commission for permission to raise its charges to domestic consumers and to discontinue service to industrial. Its right to the relief it sought depended in large part upon its convincing the Commission that its gas rights had greatly appreciated in value. It accordingly had them valued by an expert and on the 31st of December, ten days after it had filed its petition with the Commission, it credited to its capital account the $31,778,111.42 already mentioned, as the result, so the entry said, of an appraisal. The Commission in fixing the amount upon which the plaintiff was entitled to a return refused to include this alleged increase and in the subsequent cases numbered #1251 and #1516 respectively, it adhered to the position then taken. The Supreme Court of Appeals in its opin-

ion in Charleston vs. Public Service Commission, 95 W. Va. 91, already cited, reached the same conclusion.

In substance the instant case resolves itself into an attempt to convince us that in this matter the Commission and the Court were wrong. The burden of establishing that fact is upon the plaintiff and obviously is not a light one. It says that the principal ground assigned for this holding by at least one of the Commission in its latest and presumably its most thoroughly considered finding, is altogether technical, that even from that narrow standpoint, it is unsound and that in any event it should be disregarded because something far more substantial is required to justify an order which denies to it the right to get a profit from that which would otherwise yield it a rich return.

The plaintiff moreover, argues that neither the Court nor the Commission has ever denied that it was entitled to a return upon the present fair value of its gas rights. It asserts that all that has ever been decided is that the evidence before those tribunals did not show what those rights were worth. It says that if any shortcoming in that respect ever existed, it has been made good in the pending case.

NATURE OF PLAINTIFF'S TITLE TO ITS GAS RESERVE

In case #1516 in which was made the order which we are asked to say is confiscatory, one of the two Commissioners constituting the majority, said that under such leases as those held by the plaintiff, there passed "no title in the gas to the lessee and that title to the gas remains in the lessor and it continues as his property until it is extracted, when title vests in the lessee," citing Headley vs. Hoppengarner, 60 W. Va. 626. As a consequence he found that while the plaintiff had many gas leases, it

owned no gas except the comparatively small quantity in which it held the title in fee. He recognized that if the appreciated value of plaintiff's property could be shown, that appreciation must be recognized and treated as part of the rate base, but he said the value must be of something "which the utility owns, to which it has title and on which it pays taxes." As the plaintiff's evidence relating to the increase in value dealt solely with "gas reserves" and "gas acreage" it was in his view beside the mark. No testimony had been offered as to the worth of the leaseholds as such and subject to their varying terms, conditions and limitations. He therefore held that as no other value of the leaseholds had been shown, they could not be taken to be worth more than their book cost, which on the 31st of December, 1923, he said was $6,343,329.67. The other Commissioner who united in denying the increase asked for, seems to have taken substantially the same view although he put upon them a valuation of $10,500,000.

These Commissioners were unquestionably right in so far as they concluded that a fee simple title to all the gas under a given acreage would be worth more, perhaps far more than are mere rights to extract the gas under the same land when such rights are held under a thousand separate leases, containing varying terms and conditions expiring at different times, all calling for the payment of rents and royalties and to prevent the lapse or forfeiture of some of which constant vigilance is required. On the other hand, one of the Commissioners went into a somewhat elaborate discussion of the legal differences between the various kinds of titles or rights to or in gas still under the surface and by so doing has lead the plaintiff to feel, perhaps not unnaturally, that too much stress was laid upon purely technical considerations and that as a consequence substance was sacrificed to shadow. As al-

ready pointed out, there is a real difference between the value of what plaintiff has and what it would have were its title a fee simple one but for all that, plaintiff may be right in claiming that when one comes to express that difference in terms of dollars and cents, practical rather than technical considerations must govern.

PLAINTIFF'S CONTENTIONS AS TO THE VALUE OF ITS GAS RESERVES.

In some of the opinions which held that the plaintiff had not proved that its gas rights were worth much more than it paid for them, it was said that it had not offered in evidence the leases or contracts under which they were held. In the instant case, it has attempted to meet this criticism by submitting to the Court specimens of many of the forms generally used by it and has furnished tables which purport to classify those actually in force with particular reference to the payments which under them it is or may be called upon to make and, as we understand, by throwing the originals of all of them open to such inspection as any of the parties to the cause or the Court, may see fit to make of them. That is a privilege of which a special master might well avail himself but of which it is impractical for us or any of us to make use.

THE EVIDENCE OF MR. DAVIS.

The plaintiff put on the stand Mr. Ralph P. Davis, of Pittsburgh, a consulting engineer and geologist of wide experience. He was for a time director of the School of Mines of the University of Wisconsin and instructor in applied geology. As a result of his examination of the deeds, leases and contracts held by the plaintiff, he says that on the 31st of December, 1923, the plaintiff owned either the gas or the exclusive right for a period of years,

to drill for and extract gas underlying the 814,910.68 acres of land already mentioned lying chiefly in West Virginia but partly in Kentucky near the West Virginia border. More than three-fifths of this total acreage, or to be precise 552,319 acres, is located in territory in which it is not yet shown that there is any substantial probability of finding gas. Of the remainder he says, 126,208 acres are in what he calls probable territory, that is in territory in which it seems likely gas will be found. He classifies 136,384 acres as proven territory. The slightest shade over one-half of this, or 68,981 acres, were at the time being operated by the plaintiff, treating as we have throughout this opinion, certain subsidiary companies absolutely controlled by it as its mere agencies.

In this operated territory, the gas in the porous underlying rock strata is gradually being consumed by the plaintiff's customers and apparently the same is also in a sense at least true of the 67,483 acres which Mr. Davis describes as proven, but which are not part of what he calls operated territory. If we correctly understand his testimony, he includes in proven territory only that which lies in the boundary of the producing pool from which the plaintiff is obtaining gas. He says "in a few localities, pools or portions of pools are almost entirely controlled by foreign interests and these areas, although highly productive, are not classed as proven for the reason that their reserves are of no avail to the" plaintiff. Mr. Davis, as has been stated, says plaintiff controls 126,208 acres in the territory which he regards as probably underlaid with gas, but as to which that fact has not yet been established.

QUESTIONS AS TO VALUE OF GAS RESERVES.

Among the questions raised by the claim of the plaintiff, that the value of the gas under these various classes of

acreages shall be treated as part of the value upon which it is entitled to a return, are first, what is the amount of the gas under each Class? Second, what is its present value? Third, how much of that value is presently used in the public service?

AMOUNT OF GAS CONTROLLED BY PLAINTIFF.

Mr. Davis estimated the gas under the proven territory at 249,100,000 M. C. F. and under the acreage he classed as probable 414,600,000, a total of 663,700,000. It will do no good to state the methods he followed in making these estimates. It will suffice to say that they appear to have been well thought out by a highly qualified expert and to have been carefully applied. In the first instance, he used the same way of arriving at the amount of gas under the merely probable as he employed in estimating that under the proven. He then, however, examined much more closely, the available data as to each section of that which he classed as probable and made some discount from the total at which he had at first arrived. These discounts vary but they averaged 38% so that his total of gas lying under the probable acreage is but 62% of what it would be had he felt himself justified in treating that acreage as he did proven territory. His testimony stands uncontradicted. Indeed, he is the only witness on either side who has attempted to make any estimate at all. Doubtless his may be taken to be as accurate as anything of that kind can ever be. He does not attempt to as much as approximate the amount of gas which is or may be under the larger acreage which he classes as possible gas territory.

WHAT IS THE VALUE OF PLAINTIFF'S GAS RESERVES.

The plaintiff undertook in three different ways to prove the present value of its Gas Reserves.

THE VALUATION BY MR. DAVIS.

The first was by the method used by Mr. Davis. That gentleman first satisfied himself that there was at present a market for such gas in and around Pittsburgh, in which locality he was convinced, steel mills, would pay 35c per M. C. F. for it. He believes that in the future it will probably command a higher price but in his calculations, he ignores that possibility. In transporting the gas from Cedarville, W. Va., to Pittsburg, there will be some loss by leakage. It will also cost, according to Mr. Uebelacher, 3.26c per M. C. F. to transport the gas from one place to the other so that he figures the difference in the value of the gas at Pittsburg and the cost in delivering the gas from Cedarville to Pittsburg to be 27.99c. He then figures out what in the past has been the cost of producing and delivering gas at Cedarville and estimates what it will probably be in the future. By deducting these costs per M. C. F. from the 27.99c, he determines the profit which he thinks the plaintiff will make on each M. C. F. of gas which it may sell. In calculating the expense of producing and delivering the gas in the years to come, he makes allowance for the probable upward trend in the cost of production. Having ascertained in this way, the probable profit in each particular year from 1924 to 1941, each inclusive, he reduces that amount to its present worth by using a discount figure based upon an 8% value of money. The sum total of these yearly profits so reduced to present worth, is $32,458,129.17, and that he figured was the actual value of the gas at the end of 1923. It should be noted, however, that of this

$32,458,129.17, a sum which we figure to be $4,967,291.46, was the profit Mr. Davis calculated the plaintiff would earn during the eight years immediately subsequent to 1923, upon the gas which it did not own, but which it had contracted to buy. That amount is not a part of the present worth of the gas belonging to the plaintiff. Deducting it from the total given by Mr. Davis, leaves the valuation for the gas plaintiff owns, $27,490,837.71. Whether plaintiff's contracts to purchase gas at favorable rates should be regarded as part of its property upon which it is entitled to a return, may be an open question, but if it is, it was never raised in such a way as to call the attention of the State Court, the Commission or ourselves to it. The writer of this opinion did ask Mr. Davis when on the stand, why he included the gas purchased in his calculations. From his answer at the time, we did not understand the matter was of much importance as it is. Doubtless, it was our fault that we did not. In any event, the fact that the plaintiff can buy gas at a price which according to the calculations of Mr. Davis would yield it such a large profit in the open Pittsburg market, suggests, at least, that such a figure is not so certainly obtainable as Mr. Davis assumes it to be, for if it be, plaintiff's sellers would not perhaps have been so willing to make it so large a present. Moreover, it is under contract, during 1924, 1925 and 1926, to sell large quantities of gas to the Hope Gas Co., and the West Virginia Gas Co., at a price per M. C. F. of 22.65c.

The future may show that he is right in supposing the natural gas for the next eighteen years will be salable at Pittsburg for an average price of not less than 35c per M. but it is not something about which anybody can be certain. It depends upon what shall be the relative costs of other fuels or means, electric or other, of obtaining heat, the continued activity of the steel business and

many other equally unstable factors. Moreover, the conclusion of Mr. Davis that gas will now and for the future command 35c in Pittsburg, if true, has a possible significance apparently not dreamt of in connection with plaintiff's contention.

If plaintiff's gas delivered at Cedarville is really worth the figure Mr. Davis thinks it is, the return which its two stockholders receive from it is in fact much higher than the Commission assumed. In 1923, they took from it 17,613,173 M. C. F. At the price which Mr. Davis says it was worth, that is 27.99c, they would have paid for it ..... $ 4,929,927.12
They actually paid 1,282,100.69

or ..... $ 3,647,826.43
less than according to him, was its real value. Deducting therefrom 12½% for Federal income tax, or 455,978.31

there is left ..... $ 3,191,848.13
or $1,048,186.67 more than the amount which the Commission added on that account to plaintiff's net income. This sum is 11.65% on ..... $ 8,997,310.48
and the Commission's total, is sufficient
to pay that return upon $58,858,872.27
It would seem to follow that if Mr. Davis was right in concluding that plaintiff could get 27.99c a thousand for its gas, it really earned in 1923 a fair return upon no less than $67,856,182.65, which is about all that either the plaintiff or any one else claims that the property used in the gas department of its business is worth.

It should be said that while Mr. Davis, as has been before stated, figured the amount of gas under what he classed as proven and probable acreage at 663,700,000 M. C. F., for some reason in valuing it, he figured on the

1259

worth of but 636,100,000 of it. If we apportion his total valuation when corrected by deducting from it the profit on purchased gas included therein, between the proven and the probable territory in the ratio he originally calculated to be under them respectively, that is to say, 37.53% under the proven and 62.47% under the probable, the result will be a value under proven of $10,317,311.39 and under the probable of $17,173,526.32.

THE VALUATION BY MR. UEBELACHER.

Mr. Uebelacher proceeded upon the theory that "the measure of the value to the owner or lessee of the gas in the ground is the difference between the prevailing market price at which such owner or lessee can purchase gas delivered to the field mains and the cost to such owner or lessee of purchasing and maintaining in its own wells, an equivalent supply of gas at the same point of delivery." He made elaborate calculations to determine that difference and concluded it was 5c. The accuracy of this determination is not susceptible of absolute demonstration. Some of the factors which were used in arriving at it were not in themselves altogether certain and in ascertaining them, there was plenty of room for the exercise of individual judgment. He was an expert witness for the plaintiff and as such, doubtless subject to some subconscious bias in its favor. On the other hand, there is no reason to suppose that he did not try to be fair, and there is no room for question that he was both able and painstaking.

Having made up his mind that the plaintiff could get gas from its own wells at 5c per thousand cheaper than it could buy it, he assumed that it was easy to say what the present value of plaintiff's gas reserves was. All that he thought necessary was to multiply the quantities of thousands according to the estimate of Mr. Davis by

5¢ and accept the result. In this way, he valued the gas under the proven territory at $12,455,000
and under the probable at 20,730,000

or a total valuation for both of $33,185,000

It will be recalled that Mr. Davis, although he dealt with the problem in a radically different way, arrived at almost precisely the same valuation. His figures were $32,458,129.17. The difference between him and Mr. Uebelacher is only $726,870 or less than 2¼%. This agreement would be very impressive were it not that each bases his figuring upon what he assumes is the price which can be obtained for gas at Pittsburgh. Unless one or the other or both of the methods used are fallacious, a concurrence of result would have been impossible unless they had been at one as to the one factor which was common to both. Now it is a striking illustration of the uncertainty of such calculations as they have severally made that instead of agreeing as to the Pittsburgh price, Mr. Davis assumed that it was and would be 35¢ per M. C. F. while Mr. Uebelacher estimated it at 30¢. This price is to be paid at intervals over eighteen years and Mr. Davis has figured for us that every dollar so received has a present worth of 61.64¢ so that an average difference of price of 5¢ per M. C. F. over the entire period should make a difference of 3.082¢ on the present worth of each thousand feet of plaintiff's reserves or for the 663,700,000 M. C. F. of $20,455,234. As Mr. Uebelacher based his calculations upon a price of 30¢ at Pittsburgh, his totals should have been that much less than those of Mr. Davis who more optimistically assumed that 35¢ a thousand could be obtained at that point for it. We have seen that in fact they were $726,870 more.

Perhaps if this case shall go further an examination of the detailed calculation of each of the gentlemen and a

more extensive study of them than we have been able to give, will explain the apparent discrepancy which for the present makes it difficult to give either of them the weight to which by possibility one or the other or both of them may be entitled. That, however, in the first instance will be work for a Special Master.

THE VALUATION OF WITNESSES IN THE GAS BUSINESS.

Among the witnesses who testified before the Commission were five practical gas operators who have bought, sold, leased or managed gas properties in or near the territories where the plaintiff's holdings are. One of these valued the plaintiff's gas reserves under all its territory, proven, probable and possible, at $30,000,000, one at $34,000,000, a third at $35,000,000, the fourth who originally testified to a valuation of $39,000,000, subsequently, for reasons to be presently stated, reduced his total to $31,250,000. The fifth of these gentlemen said that the plaintiff's gas holdings were worth $45,000,000. The average for the first four, taking the corrected figures for the one who reduced his original valuation, is $32,500,000, a figure very close to those given by Messrs. Davis and Uebelacher for the gas under the proven and probable territory alone. These business witnesses were all highly competent men. Every one of them is, however, interested in natural gas companies. Perhaps, it would be not unnatural to suspect that they are inclined to think well of properties similar to that of which they are part owners. It is scarcely possible that their judgment remains altogether uninfluenced by the fact that the judicial decision of some of the questions raised in this case may be of great importance to their own companies.

The worth of such properties depends upon many con-

tingencies, some of them difficult or impossible to foresee. For example, as already mentioned, one of the witnesses first placed a valuation of $39,000,000 upon plaintiff's gas holdings, but subsequently reduced that total by one-fifth or to $31,250,000, because in the meantime, another large company had come or had arranged to come into the territory in which plaintiff's properties lie.

CONCLUSION AS TO THE VALUE OF PLAINTIFF'S GAS RESERVES.

It is not easy to value plaintiff's gas holdings. As has been shown every one of the various methods by which the plaintiff has attempted to do so is open to serious criticism. No one leaves upon the mind the conviction of certainty or finality. Doubtless as a whole, the rights are worth a good deal more than the plaintiff paid for them and they may approximate three times as much as the most they ever cost it. For reasons to be presently stated we do not think we are called upon to make a definite finding on that question.

HOW MUCH OF PLAINTIFF'S GAS RESERVES ARE USED IN THE PUBLIC SERVICE.

The plaintiff at a net cost of a few millions acquired rights which it claims have now a value of upwards of thirty and which it might be difficult to deny, were worth two-thirds of that sum. What proportion of this is presently used and useful in the public service? Roughly, four-fifths of the valuation it puts upon them is represented by gas which upon reasonable grounds it believes to be under land in which it has not yet operated and nearly two-thirds under acreage underneath which it has not yet been demonstrated that there is any gas, although its presence there is probable. Plaintiff is not to be criticised for acquiring these rights widely extended and

largely untested as they are. In securing them, it doubtless acted wisely both from its own standpoint and from that of those who depend upon it for their supplies of gas. But, is that of any present importance?

The plaintiff denies that it can properly be limited to a return upon its investment and cites decisions of controlling force in support of its position. Its right to relief is nevertheless absolutely dependent upon its being able to maintain the position that it is entitled to a fair return upon the present value of such of its property as is used and is useful in the public service. Whether it showed good judgment in acquiring and holding any other property is irrelevant to any issue upon which it here seeks a decree. No part of the gas which is supposed to be under the acreage classed as either probable or possible is "used" in the public service or for that matter in any other, in any ordinary sense of that word.

Mr. Davis, as we have seen, valued the gas owned by the plaintiff and under the 136,834 of proven territory, operated and unoperated at $10,317,311.39. On December 31, 1923, plaintiff was operating only 68,981 acres or 50.58% of these. The total supply of gas under this operated territory calculated according to his methods was then 124,994,780 M. C. F., and was worth, he estimated, $5,218,496.50. There was under the acreage which he classed as proven but not operated an additional 124,105,220 M. C. F. valued by him at $5,098,814.89. If we are right in our understanding of his testimony, it would perhaps be possible to claim that all of the gas in both classes was tributary to the territory which was in operation, in the sense that the plaintiff was drawing from the pools containing it. It will be noted that the total of the gas underlying the proven acreage was 249,100,000 M. C. F. As the plaintiff sells annually about 47,000,000 M. C. F. of which 10,500,000 goes to the West Virginia retail purchasers, it has under its proven

territory gas enough for everybody for more than five years and an amount sufficient to meet the needs of its public service patrons alone for almost a quarter of a century.

For the reasons already stated, we cannot see how any other portion of its gas can be held to be used in the public service, no matter how elastic a definition be given to the word "used". At the risk of tiresome repetition, we can say that we do not criticise plaintiff for acquiring any or all its gas rights. It was doubtless wise to get them. All that we decide is that in arriving at the rate base upon which plaintiff is entitled to a fair return, we may not combine two opposing theories. We are not justified in saying that because plaintiff's investments in gas reserves were prudent, those reserves immediately went into use and that therefore plaintiff is entitled to have them appraised at the many times higher value it says they now have. If in dealing with its tangible property and going concern value, we are required to ignore, except for check purposes, plaintiff's investment in them, we must apply the same rule to its gas services.

If we are right $10,317,311.39 is the highest valuation which can be put upon such portion of plaintiff's reserves as it has any claim to include in its rate base. Even that much can be allowed only upon the assumption that any considerable part of these reserves is in use in the same sense as are pipe lines, pumps, compressors and many other things. But, is that assumption correct? The ordinary public utility is essentially the supplier of a service, whether it is also a manufacturer or even to a limited extent a merchant. This is true, although it may furnish something such as artificial gas or electricity which is also an article of merchandise.

The peculiarity of the instant case is that the plaintiff not only serves its domestic and retail customers in West

Virginia as any other utility would do, but that it is also engaged on a very large scale in the business of selling to them and to others, principally to the latter, an article of which it has accumulated a supply ample for a number of years to come, but which is consumed in the use and cannot be replaced except possibly by the acquirement from others of additional supplies out of the definitely limited quantities now in existence. If it bought from someone else the gas which it distributes in Charleston, Huntington and other West Virginia places, what it paid to the seller would form a part of its operating costs at least whenever it and the seller had no connection with each other and dealt at arms length. In that event, the value of the gas reserves owned by the concern which sold the plaintiff gas would have nothing to do with the value of the latter's property used and useful in the public service.

Is it clear that the situation in this respect is different merely because the plaintiff owns the gas it furnishes? If it is not, we are not here concerned with the valuation which may be placed upon plaintiff's gas reserves or upon any important part of them. Upon the assumption suggested, Commissions and Courts, when called upon to deal with the rates which the plaintiff is entitled to charge would, as in other like cases, have to determine the value of the plaintiff's tangible property used in the public service including therewith a sufficient allowance for working capital and going concern value. The total of these items would represent all upon which it would be entitled to earn a return and all upon which any allowance for depreciation and amortization should be made. Having determined what the plaintiff's gross income is, precisely as they would in any event have to determine it, they would add the fair market value of the gas it delivers to its public service customers to what they had ascertained to be its outlay for operating expenses and taxes.

It would then be necessary to determine whether such net income as so calculated after making proper allowance out of it for depreciation and amortization, was sufficient to yield plaintiff a fair return upon the value of its property. However plausible this view may be, it does not seem to have occurred to any of the parties to the cause nor to any of the learned counsel engaged in it. So far as we can recall, no reference has ever been made to it by the Commission nor by the Supreme Court of Appeals of the State. The presumption against it is, therefore, strong, but on the other hand, it has something of apparent reasonableness about it for West Virginia cannot require plaintiff to sell its gas in the State if it can get a higher price elsewhere. Pennsylvania vs. West Virginia, 262 U. S. 553, 559. If it be sound, there will be no need to seek a solution of a number of problems which are difficult or impossible to solve. At present we do no more than propound it, so that in the further proceedings in the cause, it may be given such consideration as it may merit, if indeed it be worth any at all.

THE MAXIMUM VALUATION OF THE PROPERTY UPON WHICH THE PLAINTIFF IS ENTITLED TO A RETURN.

We have heretofore stated that we were satisfied that the value as of December 31, 1923, of all the plaintiff's property other than its gas reserves did not exceed $29,900,000.00

The highest possible value which on the day named could be put upon such portion of its gas reserves as could by any possibility be considered as then used in the public service was 10,317,311.39

The total of these sums, or $40,307,311.39

is the maximum upon which the plaintiff was then entitled to a return. We do not fix that amount as its rate base. We can not do so without answering some questions which we have purposely left open. All that we decide is that upon the record before us a higher figure would be unjustified.

PLAINTIFF'S BUSINESS AS A WHOLE YIELDS A FAIR RETURN.

We have already ascertained that the net income which in the year 1923 it earned for its stockholders, was sufficient after providing for depreciation and amortization, to pay a fair return upon at least $53,295,278.24. While it is true that if all plaintiff's contentions were accepted at their face value, it might be possible to argue that its business as a whole did not pay it a fair return as it calculates such a return, yet it has never claimed that its entire operations considered as a unit, have been unprofitable in the ordinary sense of that term. Indeed it could not. It, or a substantially identical predecessor, was organized in 1903 but it did not begin operations seriously, if at all, until some time in 1909 when it took over the properties of two or three previously existing corporations. How much actual money was ever put into it is not quite clear. The aggregate did not exceed $6,000,000 and it may well have been less. Until April, 1916, it paid no cash dividends, but between that time and the end of 1923, its stockholders have in that way received a total of $28,024,900. Indeed as has already been mentioned, that is not all which they have had from it. In the last few years, as has been stated, it has made a practice of selling much gas to them at prices admittedly greatly below the market, to their advantage in a sum which will run into the millions and which the protestants not without reason, argue amounted to as

much as $7,655,722.32. It follows that in the fourteen years and a half since its organization its stockholders have taken out of it somewhere between $30,000,000 and $35,000,0000 in money and money's worth or from five to six times as much as they say they put in it, nor if their view be accepted, have they beggared it in the process. They claim that on the last day of 1923, the fair value of that portion of its property which they have left to it and which is used in the gas department of its business was at the lowest $66,070,496.00
while it owed only 12,060,343.34

so that its net worth was at least $54,010,152.66
or nine times the utmost they ever entrusted to it. Moreover, if we correctly understand the figures submitted, this sum leaves altogether out of account an additional $13,343,176.15 of value, which it says is the worth of the property it uses in the other departments of its business and which is also the product of the original $6,000,000 its stockholders invested in it. It has not proven an unprofitable servant.

The large valuation it places upon the holdings is, in spite of the fact that it has sold from its own wells over 400,000,000 thousands of cubic feet of natural gas, a commodity which does not reproduce itself and which perishes in the using. Its expert witnesses we know say that it has 663,000,000 thousands of cubic feet still left. Even if they are right, it has already sold more than a third of all the gas it ever had and they assert that on the thirty first of December, 1923, its property was still worth nine times as much as they originally put into it. It is the story of the Sybilline books put into modern dress.

None of this the plaintiff says, has anything to do with the case. It asserts that the exceptional good fortune which has come to it in the way of an unusual increase

1269

in the value of the property it is using in the public business, justifies it in saying that rates are confiscatory which would have been entirely fair had it had no better luck than that which falls to the lot of most mortals. To any suggestions that it is seeking to have fulfilled for its benefit the prophecy that to him that hath shall be given, it answers that it is entitled to rates which will pay a fair return upon the value of its property used and useful in the public service for which the charges are made as that value stands at the time those rates are in force. In its view, it is immaterial how much value compares with the prices it paid for its property. That circumstance and others of a similar kind, it contends, are relevant only for such light, if any, as they may throw upon present worth.

THE REGULATED PORTION OF PLAINTIFF'S BUSINESS.

If we are correct in the conclusions to which we have thus far come, there is no occasion for any one to challenge these positions of plaintiff even if it be assumed that any of them are open to controversy, with the possible exception of the implication that its regulated and unregulated business are to be regarded as distinct entities.

It furnishes gas to two kinds of customers. A little more than one-fifth of all it produces or buys from others, it distributes directly to industrial and domestic consumers in West Virginia. A smaller amount goes to the like kind of patrons in Kentucky and Ohio. It sells the remainder to certain wholesale customers, individuals and corporations who for the most part are not themselves its ultimate users but who transport, distribute and sell it at retail in States other than West Virginia. It says that the former portion of its business does not

yield a fair return whatever may be the case with reference to the latter. Its adversaries claim that so long as what it gets from its gas business as a whole is profitable, it cannot say its property,or any part of it, is being confiscated or is being taken from it without due process of law. They assert that it is well settled that it is a public service corporation as to all of its gas business. Clarksburg Heat & Light Co. vs. Public Service Commission, 84 W. Va. 638, Carnegie Natural Gas Co. vs. Swiger, 72 W. Va. 557; Peoples Natural Gas Co. vs. Public Service Commission, 279 Pa. 252. It could not have constructed its miles of pipe line if everybody had not known that it could on occasion exercise the power of eminent domain. Without such means of transmitting its gas, it could not carry on either branch of its business. The fact that the Commission has not seen fit to regulate its wholesale prices and has not interfered to prevent its discriminating among its wholesale customers by selling to one at one price and to another at a very much higher or lower one, is immaterial. If, as it claims, the rates it is forced to allow its retail customers discriminate unfairly against its wholesale, the *latter* may have a right to complain, but *it* may not so long as in the aggregate it is getting a fair return upon all its property used and useful in the public service.

It answers that for the Commission to compel it to make a present of any part of the value of any of its wares to anybody is to take from it property without due process of law. The question is important. Is it necessary to answer it?

THE REGULATED PORTION OF ITS BUSINESS. NET INCOME.

There is little difficulty in ascertaining the gross earnings of the regulated portion of its business. In 1923

1927

they were	$2,307,051.00
to which should be added a proper proportion of the plaintiff's gasoline earnings, which it is agreed is	234,626.00
so that the total gross income of the plaintiff's regulated business in the year named was	$2,541,677.50
Subject to a reservation presently to be mentioned, it is admitted that its operting expenses and taxes amounted to	986,084.00
Thus leaving a net income of	$1,555,593.00

The reservation mentioned is as to an item of $147,945, a part of a still larger sum which the plaintiff expended in the payment of delayed rentals to preserve its leases or options in unoperated territory. It is admitted that if the plaintiff is entitled to include such outlay in its costs of operation the amount above named is properly chargeable to the public service portion of its business.

From what has been said, it is clear that we cannot hold that they, or any of them, are charges upon the property of the plaintiff used and useful in the public service. It may not, however, necessarily follow that they are not expenses which a utility situated as the plaintiff, may in good faith, pay out of and properly charge against its current operating income. It is another of the questions which as they need not be decided, we content ourselves with noting.

It may be said that the total of these delayed rentals amounting to $589,186 were included in the operating expenses which we deducted from the plaintiff's gross income from its entire gas business in order to arrive at the net sum available for depreciation, amortization and return. Had we done so, the net income would have

been sufficient to provide for these charges on a valuation of five million higher than has heretofore been calculated.

If we deduct from the net income of the regulated portion of its business $1,555,593.00
the proper proportion of the total sum allowed for annual depreciation, or say 113,658.00

There is left $1,441,935.00
a sum sufficient to yield a return of 11.65 on $12,377,124.42

VALUE OF PROPERTY USED IN REGULATED BUSINESS.

What, on the 31st of December, 1923, was the fair present value of that part of plaintiff's property used in the regulated portion of its business? We have found that all of its tangible property was not worth more than $26,000,000
The parties have agreed as to percentages of the value of various portions of this property properly allocated to its public service activities. Applying them we find that of such $26,000,000, approximately 7,530,826
will represent the highest valuation which can be put upon the tangible property used in the part of plaintiff's business with which we are now concerned.

Of the $3,000,000 allowed as going concern value 847,350
belongs in the same category.
As does 282,546
of the $990,000 of working capital.
The total is $8,660,822
Of the $10,317,311.39 which is the highest valuation which we have found we

could put upon plaintiff's gas reserves, upon the assumption that any appreciable part of them may be included in its rate base, there should be allocated to the regulated portion of the business 2,590,677

It follows that the total value of plaintiff's property of all kinds used and useful therein did not exceed $11,251,499

As the plaintiff received from this part of its business an income sufficient to pay a return upon $12,377,124.12

or 1,125,624.12

more than the maximum worth of its property used therein, we cannot hold that the Commission erred in denying it an increase of rates.

APPLICATION OF AMORTIZATION RESERVES.

We have not overlooked that fact in the view of the Commission, or at all events, of that member of it who delivered the principal opinion, account should be taken of the reserve which the plaintiff has already accumulated for purposes of amortization. The plaintiff's rates have been for years fixed by the Commission. They purposely have been made high enough to permit the laying aside of huge sums for amortization, and the plaintiff either has them, or has distributed them among its stockholders. It says these facts, if facts they are, are immaterial to any question before the Court. Its theory perhaps is there is a new taking of its property every time there is an attempt made to raise or lower a rate and whether it has in its depreciation or amortization reserve any sums large or small, is beside the mark. We state the position of the parties. The exigencies of the case do

not require that we should express any opinion upon them and we do not.

CONCLUSION.

In our consideration of the case, for income and outgo, we have used the figures for the calendar year 1923. If the case shall go to final hearing and a reference be had to a Special Master, either of the parties will, of course, be free to bring everything down to a convenient date, say the end of 1925 or any later date that would be practical.

This opinion has been too long delayed and is of inordinate length. In the way we approached the consideration of the case we were called upon to deal with numberless figures scattered through many exhibits. We have been tempted into not a few calculations. It is not only possible but probable that we have fallen into arithmetical as well as other errors. All that we can say is that from the best consideration, we have been able to give to the case, we do not feel that the plaintiff has shown that it is entitled to a preliminary injunction. Upon final hearing, we shall not necessarily consider ourselves bound by any of the findings of fact or conclusions of law herein contained. All of them will then be open to further consideration.

As the record now is, the motion for an interlocutory injunction must be denied.

McDowell, District Judge, dissents.

[fol. 1529] In United States District Court

[Title omitted]

Judgment—May 10, 1926

This cause having been submitted on the 18th day of May, 1925, to the undersigned, sitting under the authority of Section 266 of the Judicial Code, upon the motion of the plaintiff for an interlocutory injunction, enjoining, inhibiting and restraining the defendant The Public Service Commission of West Virginia and the members thereof as named in the bill, from interferring or preventing the plaintiff from putting in effect its rates for natural gas service as filed before said Public Service Commission, was heard by the undersigned at said time upon the bill and the exhibits therewith filed, the answer of the defendants, as well as the answer of the intervenors, filed herein by formal order entered herein; and, by agreement of the parties, upon all of the evidence, exhibits, documents and writings introduced before the Public Service Commission of West Virginia upon the hearing before that body, which, by agreement of the parties, are, as to the evidence of the witnesses, to have the same force and effect as if said witnesses were personally present and testified before this court, and the said documents to have the same force and effect as if they were now originally introduced with the testimony of said witnesses; and upon the further testimony of witnesses and of documents offered in open court before the undersigned upon said hearing; and upon all of the matters upon which the undersigned Judge of the District Court of the United States for the Southern District of West Virginia heard said cause upon the motion for a temporary restraining order, as shown by the order entered herein.

And all of the matters arising upon said motion for an [fol. 1530] interlocutory injunction having been fully considered, the said motion is, for reasons stated in writing and filed with the record herein as part hereof, denied. The opinion of the court, prepared by Circuit Judge Rose,

was concurred in by District Judge McClintic. District Judge McDowell dissented.

John C. Rose, Circuit Judge. George W. McClintic, District Judge.

[fol. 1531] In United States District Court

[Title omitted]

Petition for Appeal

The petition of United Fuel Gas Company, a corporation, plaintiff herein, respectfully represents:

That the plaintiff is aggrieved by the judgment and decree rendered herein on the — day of May, 1926, in favor of the defendants, refusing to issue an interlocutory injunction as prayed for in the bill in this case, and the said plaintiff, for the reasons specified in the assignment of errors filed herein, desires to appeal from said decree to the Supreme Court of the United States.

Wherefore your petitioner prays that said appeal may be allowed, on its giving bond in the amount to be fixed by this court; that said appeal may be made returnable to the Supreme Court of the United States, according to law; and that a transcript of the record, proceedings, papers and exhibits upon which said decree was rendered, [fol. 1532] duly authenticated, be sent to said Supreme Court of the United States. And your petitioner prays for all general and equitable relief.

Harold A. Ritz, Solicitor for Plaintiff.

[fol. 1533] In United States District Court

[Title omitted]

Assignments of Error

The plaintiff above named prays an appeal from the decree of this court in the above styled action, denying to it an interlocutory injunction as prayed for, to the Supreme Court of the United States, and assigns for error:

First. The court erred in holding that 3.65% of the value of plaintiff's property as found by said court, would be a generous allowance for amortization. This finding is on the basis that the plaintiff's property has a life of eighteen years, while the court later finds that the gas supply of the plaintiff, used and useful in the public service, will only last for five years with the plant operating as at present, and if it has a gas supply used and useful for the public service for only five years, the plant, then, should be amortized within that time. If, on the other hand, it is said that the gas supply found to be used and useful in the public service will be sufficient for a twenty five year sup- [fol. 1534] ply for the public service consumers in West Virginia, then all of the expense of operation of the plant, as well as the return on the entire investment, should be charged to the public service consumers of West Virginia. If the plant is to be amortized in five years, the life of the supply of gas found by the court, the rate would have to be far in excess of that asked. If, on the other hand, the gas supply is to be all attributed to the public service in West Virginia and all of the Company's operations limited to that service, the rate for gas would have to be much higher than that asked in order to pay the expense of operation and rate of return on the entire investment.

Second. The court erred in ascertaining the plaintiff's earnings by adding to the earnings reflected on its books the sum of $2,143,691.46, the amount which it should have, according to the court's interpretation, charged to its stockholders for gas furnished to them in addition to the amount which it did actually charge. This amount is ascertained by fixing the price which it should have charged to these stockholders for the gas delivered at one point by wholesale at 22½ cents per thousand cubic feet, and results in compelling the plaintiff to charge its own stockholders a much higher rate for gas than it is required to sell the same gas for to public service consumers in West Virginia, while the gas sold to such public service consumers at 20 cents per thousand cubic feet is delivered to each of them at their respective residences and many thousands of collections made in order to secure the same amount of money that is derived from one delivery and one collection from the plaintiff's stockholders.

Third. The court erred in including in the earnings of the plaintiff $934,393.41 as profit on gasoline extraction. [fol. 1535] The business of extracting gasoline is entirely separate from that of marketing the natural gas, and is done under a contract by which the plaintiff receives one-eighth of the gross returns from such gasoline, and this one-eighth is reflected in the accounts of the plaintiff. There is no showing that this contract is not entirely fair. If, however, it be conceded that the plaintiff is entitled to have, as part of its earnings, one-half of the net profits from the gasoline business, it was erroneous to take such one-half of the net profits of an extraordinary year as shown by the record, instead of the net profits of a normal year, which are shown by the record to be $516,000.00 instead of $934,393.41.

Fourth. The court erred in its findings that the value of the plaintiff's tangible property, including going concern value and working capital, was no more than $29,980,000.00.

Fifth. The court erred in finding that the value of the gas lands owned by the plaintiff and held by it under lease, used and useful in the public service, was not more than $10,317,311.39.

Sixth. The court erred in not including in the valuation of plaintiff's tangible property the sum of $2,044,778.21, which the record of the hearings before the Public Service Commission of West Virginia shows was added to said property during the year 1924.

Seventh. The court erred in finding that the value of plaintiff's property devoted to the public service in West Virginia was no more than $11,251,400.00. This value is based upon the values found by the court for the whole of plaintiff's property, in which it is claimed, as before indicated, the court erred.

Eighth. The court erred in determining that 8% return [fol. 1536] was a fair rate of return upon the value of the property used and useful in the plaintiff's hazardous business.

Ninth. The court erred in determining that $404,223.00 a year was an adequate allowance for depreciation reserves.

Tenth. The court erred in holding that the rate allowed to the plaintiff for gas delivered to its public service consumers in West Virginia produces a fair return on the investment or value of the property properly assignable or attributable to the West Virginia public service business.

Eleventh. The court erred in not holding that the plaintiff was entitled to a fair return upon its investment devoted to the public service in West Virginia, regardless of whether or not it was receiving a fair profit from its other business sufficient to make the whole of its business profitable.

Wherefore plaintiff prays that the said decree be reversed, with directions to enter a decree as prayed in plaintiff's original bill herein.

Harold A. Ritz, Solicitor for Plaintiff.

[fols. 1537-1539] Bond on Appeal for $2,000 approved; omitted in printing.

[fol. 1540] In United States District Court

[Title omitted]

Order Allowing Appeal—May 10, 1926

Upon considering the foregoing petition, this day presented, it is ordered that an appeal be allowed to the United Fuel Gas Company, a corporation, the petitioner herein and plaintiff in this action, from the decree of May —, 1926, rendered against said plaintiff in the above entitled cause, and that said appeal shall be returnable to the Supreme Court of the United States, upon the giving of an appeal bond by said plaintiff in the penalty of Two Thousand Dollars, and that a transcript of the record, including all of the exhibits offered in evidence by either party, be filed in the Supreme Court of the United States, according to law, as prayed for.

John C. Rose, Circuit Judge. George W. McClintic, District Judge. Henry C. McDowell, District Judge.

[fols. 1541 & 1542] Citation, in usual form, showing service on Paul W. Scott et al., omitted in printing.

[fol. 1543] In United States District Court

[Title omitted]

Order Extending Time—May 26, 1926

The plaintiff, United Fuel Gas Company, in the above entitled cause, having been allowed an appeal from the decree entered herein refusing it a temporary injunction, which appeal is returnable before the Supreme Court of the United States on the 9th day of June, 1926, and it appearing that it may not be possible to secure a transcript of the record to be lodged in the said Supreme Court of the United States on or before the said 9th day of June, 1926, it is ordered that the time within which said transcript may be made up and filed in said Supreme Court is hereby extended for thirty days from the said 9th day of June, 1926. And it also appearing that it may not be possible to get the narrative of the evidence made up as provided by the rule of said Supreme Court, within the the said thirty days, the time within which said narrative of evidence shall be made up and filed is likewise extended for thirty days from said 9th day of June, 1926.

John C. Rose, U. S. Circuit Judge. Henry C. McDowell, U. S. District Judge. Geo. W. McClintic, U. S. District Judge.

[fol. 1544] In United States District Court

[Title omitted]

Stipulation re Transcript of Record

The undersigned counsel for the parties in the above entitled cause, hereby stipulate and agree that in making up the transcript of the record for the appeal herein the Clerk shall include in said transcript the following:

1. The bill of complaint and Exhibits "A" and "B" and Exhibit "P. S. C. Opinions," filed therewith.
2. Answer of the named defendants.
3. Answer of the intervenors.
4. Order refusing temporary restraining order.
4a. Order convening special statutory court.
5. Narrative statement of the evidence and the exhibits made part thereof by reference thereto in said statement.
6. Opinion of Judge Rose.
7. Decree refusing temporary injunction.
8. Petition for appeal.
9. Assignment of errors.
10. Appeal bond and approval.
11. Order allowing appeal.
12. Citation and proof of service.
12½. Order granting extension of time for preparing record.
13. Praecipe and Clerk's certificate.

Harold A. Ritz, Counsel for Plaintiff. F. M. Livezey, Atty. for Public Service Commission; Howard B. Lee, Attorney General; Geo. S. Wallace, Atty. for Huntington Mfg. Club; Paul W. Scott, Atty. for City of Huntington; A. G. Stone, Asst. City Solicitor, of City of Charleston; Robert S. Spillman, of Counsel for Certain Intervenors, Counsel for Defendants and Intervenors.

[fol. 1545] Clerk's certificate to foregoing transcript omitted in printing.

[fol. 1546] In United States District Court

[Title omitted]

Order Extending Time to File in U. S. Supreme Court May 28, 1929

The plaintiff, United Fuel Gas Company, in the above entitled cause, having been allowed an appeal from the decree entered herein refusing it a temporary injunction,

which appeal is returnable before the Supreme Court of the United States on the 9th day of June, 1926, and it appearing that it may not be possible to secure a transcript of the record to be lodged in the said Supreme Court of the United States on or before the said 9th day of June, 1926, it is ordered that the time within which said transcript may be made up and filed in said Supreme Court is hereby extended for thirty days from the said 9th day of June, 1926. And it also appearing that it may not be possible to get the narrative of the evidence made up as provided by the rule of said Supreme Court, within the said thirty days, the time within said narrative of evidence shall be made up and filed is likewise extended for thirty days from said 9th day of June, 1926.

John C. Rose, U. S. Circuit Judge. Henry C. McDowell, U. S. District Judge. Geo. W. McClintic, U. S. District Judge.

A true copy from the record.
Attest:

Ira E. Mottesheard, Clerk. (Seal.) (District Court United States, Southern District West Virginia.

[fol. 1347] [File endorsement omitted]

[fol. 1348] In Supreme Court of the United States

Statement of Points to be Relied Upon and Designation by Appellant of Parts of the Record to be Printed with Proof of Service. Filed June 8, 1926.

In accordance with the provisions of Paragraph 9 of Rule 11 of this court, the appellant here states and declares the points upon which it intends to rely and parts of the record which it thinks necessary for the consideration thereof to be as follows:

First Point

The holding of the court that 3.65% per year of the value of plaintiff's property is a generous allowance for

amortization is grossly inadequate for that purpose, upon the basis of the values found by the said court.

The decision of this point requires the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and the intervenors, the evidence of Charles F. Uebelacker, Ralph E. Davis, T. O. Sullivan, John B. Corrin, T. B. Gregory, J. C. Blair, James J. Cabot, G. A. Cunningham, John Davidson, L. B. Denning, John L. Dickinson, H. O. [fol. 1549] Dunfee, M. S. Fouts, D. E. Goode, Ben C. Grosscup, W. C. Hardy, N. R. Henderson, W. J. Hightower, D. C. Jay, D. A. Ketchum, Azel Meadows, S. W. Meals, E. A. Palmer, J. A. Peirce, Edward Reynolds, Jr., Ira G. Sayre, H. G. Scott, C. R. Varnum, H. A. Wallace, A. G. Womack, J. G. Ward, W. J. Hagenah, John Jirgal and C. E. Krebs, as shown by the narrative of evidence filed herein, as well as the various exhibits filed with the evidence of said witnesses as part of said narrative of evidence, as indicated therein, the opinion of Judge Rose filed herein, and the decree refusing the temporary injunction, and makes necessary the printing of all of said parts of the record above referred to.

Second Point

The court below was in error in adding to the earnings of the plaintiff and appellant as reflected by its books, the sum of $2,143,661.46 as additional compensation which should be charged to the parent companies on account of the gas delivered to them. The effect of this addition to the earnings of the plaintiff was and is to compel the appellant, in its dealings with the parent companies, to charge them a higher rate for gas at wholesale than it is permitted to charge to its public service consumers in West Virginia, at retail, after distribution.

The decision of this point involves the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and intervenors, and the evidence of Charles F. Uebelacker, W. J. Hagenah, John Jirgal and W. J. Hightower, as shown by the narrative of evidence filed herein, together with the exhibits made part of said evidence of said witnesses as indicated by said narrative of evidence, as well as the opinion of

Judge Rose filed herein, and makes necessary the printing [fol. 1550] of those parts of the record.

Third Point

The court below erroneously added to the earnings of the plaintiff and appellant the sum of $934,393.41 as profit on gasoline extraction.

The decision of this point involves the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and intervenors, and the evidence of Charles F. Uebelacker, W. J. Hightower, H. A. Wallace, John Jirgal, W. J. Hagenah and C. E. Krebs, and the exhibits filed with the testimony of said witnesses, all as shown by the narrative of evidence filed herein, as well as the opinion of Judge Rose filed herein, and makes necessary the printing of those parts of the record.

Fourth Point

The court's conclusion that the value of the plaintiff's tangible property, including going concern value and working capital, was no more than $20,[illegible], is erroneous.

The decision of this point makes necessary the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and intervenors, and the testimony of all of the witnesses as shown by the narrative of evidence filed herein, together with the exhibits attached to and made part of the testimony of said witnesses as shown by said narrative of evidence, and the opinion of Judge Rose filed herein, and makes necessary the printing of those parts of the record.

[fol. 1551] Fifth Point

The finding of the court that the value of the gas lands or rights owned by the plaintiff and appellant and used and useful in the public service, was not more than $10,317,311.39, is erroneous.

The decision of this point involves the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and intervenors, the evidence of all of the witnesses introduced

herein as shown by the narrative of evidence filed herein, together with the exhibits made part of the evidence of said witnesses as shown by said narrative of evidence, and the opinion of Judge Rose filed herein, and makes necessary the printing of all thereof.

Sixth Point

There should have been added to the value of the tangible property of the plaintiff and appellant the sum of $2,044,778.24, new investment made during the year 1924, in order to bring the said value down to the end of the year 1924.

The decision of this point involves the consideration of the evidence of W. J. Hightower and the exhibits therewith, and of John Jirgal and the exhibits therewith, and makes necessary the printing of the evidence of these witnesses and the exhibits with their testimony.

Seventh Point

The finding of the court that the value of the plaintiff's property devoted to the public service in West Virginia was not more than $11,251,499.00, is erroneous.

The decision of this question involves the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opin. [fol. 1552] ions" therewith, the answers of the defendants and intervenors, and of all of the evidence as shown by the narrative of evidence filed herein and the exhibits made part thereof as shown thereby, and also the opinion of Judge Rose filed herein, and makes necessary the printing of all of the record above referred to.

Eighth Point

The allowance by the court of an 8% return upon the value of the plaintiff's property as sufficient is complained of. This return should have been at least 10% upon the value of the plaintiff's property engaged in the hazardous business in which it is employed.

The decision of this point involves the consideration of the pleadings filed herein, of the evidence of Charles F. Uebelacker, L. B. Denning, John L. Dickinson, W. C. Hardy, H. A. Wallace, John Jirgal and W. J. Hagenah, as shown by the narrative of evidence, as well as the exhibits made

part of the evidence of said witnesses as shown by said narrative of evidence, and also the opinion of Judge Rose filed herein, and makes necessary the printing of those parts of the record.

Ninth Point

The court should have allowed more than the sum of $404,333.80 for the purpose of depreciation reserves for the plaintiff and appellant.

The decision of this point involves the consideration of the pleadings filed herein and of the evidence of Charles F. Teteslacker, W. J. Hightower, H. A. Wallace, W. J. Hagenah and John Jirgal, and the exhibits filed therewith as shown by the narrative of evidence filed herein, and the [fol. 1553] opinion of Judge Rose filed herein, and requires the printing of all of said matter.

Tenth Point

The plaintiff and appellant is not receiving a fair return upon the fair value of its property devoted to the public service in West Virginia, and the rates now prescribed will not produce such a fair return.

The decision of this point involves the consideration of the pleadings filed herein, the opinion of Judge Rose filed herein, and the narrative of evidence, together with the exhibits filed with the testimony of the witnesses as shown by said narrative of evidence, and requires the printing of all of said matter.

Eleventh Point

The court should have held that the plaintiff was entitled to a fair return upon its investment devoted to the public service in West Virginia, regardless of whether or not it was making a profit from its other business sufficient to make the whole of its business successful.

The decision of this point involves the consideration of the opinion of Judge Rose filed herein, and necessitates the printing thereof.

Harold A. Ritz, Counsel for Appellant.

Dated Charleston, W. Va., June —, 1926.

[fol. 1554] Legal service of the above and hereto attached Statements of Points and Parts of the Record to be Printed in the case of United Fuel Gas Company against the Public Service Commission of West Virginia, is hereby accepted on behalf of the appellees, this 8th day of June, 1926.

Robert S. Spilman, of Counsel for Interveners; Paul W. Scott, Atty. for City of Huntington; George S. Wallace, Atty. for Huntington Mfgrs. Club; A. G. Stone, Asst. City Solicitor, City of Charleston; Howard B. Lee, Attorney General; F. M. Livezey, Attorney for Public Service Commission, Counsel for Appellees.

[fol. 1555] [Endorsed:] File No. 32,006. Supreme Court U. S., October Term, 1926. Term No. 439. United Fuel Gas Co., appellant, vs. Public Service Commn. of West Virginia et als. Statement of points to be relied upon and designation by appellant of the parts of the record to be printed, with proof of service thereof June 8, 1926. Filed June 8, 1926.

Endorsed on cover: File No. 32006. S. West Virginia D. C. U. S. Term No. 439. United Fuel Gas Company, appellant, vs. The Public Service Commission of West Virginia, Burk S. Stathers, Ernest D. Lewis, et al. Filed June 8th, 1926. File No. 32006.